

# Neurological semiology in the works of Gonzalo de Berceo

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## ABSTRACT

**Objectives.** This article analyses references to diseases and medical terminology related to what is known today as neurology in the works of Gonzalo de Berceo.

**Material and methods.** The 12 works recognised as having been written by Berceo, and particularly the accounts of miracles in the biographies of Saint Dominic of Silos and Saint Aemilianus and in *The miracles of Our Lady*, were reviewed and analysed from a medical perspective. Contemporary works were also reviewed, and the references to disease were compared. A specific analysis was performed for *The life of Saint Oria*, one of the first written references to mysticism.

**Results.** Berceo's writings frequently depict clinical pictures including headache, sensory alterations (loss of vision and hearing), weakness and paralysis, sensory alterations, ergotism, muscle contractures, possible dystonia, pain, probable stroke, tetanus, delusions, deficiency diseases, etc. We also, of course, observe cases of demonic possession, some of which clearly show epileptic semiology. Berceo's work probably also contains the first description of Tourette syndrome. *The life of Saint Oria* may also include the earliest description of ecstatic epilepsy.

**Discussion and commentary.** The scarce literature on medical aspects of Berceo's work is discussed and correlated with the findings of the present study.

**Conclusion.** Berceo's extensive oeuvre, due to both its status as hagiographic literature (particularly the thaumaturgic references) and its faithful, colloquial portrayal of life at the time, represents an essential source for studying disease in the Middle Ages.

## KEYWORDS

Gonzalo de Berceo, hagiography, miracle, neurological symptoms

## Introduction

### *Biographical note*

Gonzalo de Berceo (Figure 1) is the first known poet to write in the Spanish language. He was probably born around 1198 (according to the available documentation, he was ordained a deacon, which required an age of 23 years, in 1221) in the Madrid neighbourhood in Berceo, a hamlet in La Rioja; Saint Aemilianus (San Millán)

was born in the same village in 473. From references in his works, we know that he was alive in 1252; according to documents from the monastery of San Millán, Gonzalo de Berceo had died there by 1264, as had Saint Aemilianus in 574.

Gonzalo was the name of the author of this work.

He was reared as a youth in San Millán.

He was a native of Berceo where San Millán was born [...].

*The life of Saint Aemilianus of La Cogolla (st. 489)*

Should you wish to know who made this dictation,  
by name he is known as Gonçalvo de Berceo,  
born in Madrid, raised in San Millán,  
appointed notary of the abbot Juan Sánchez.

*Libro de Alexandre* (st. 2675)<sup>A,B</sup>

Between 1222 and 1227, he studied at the Studium Generale of Palencia, created in 1208 by bishop Tello Téllez de Meneses. Documents from 1237 name him as a priest. He was a master of novices. In the final stanza of the *Libro de Alexandre* (whose authorship is attributed to him by some, but is subject to great controversy among Berceo scholars), he is referred to as a notary (secretary) of the abbot, Juan Sánchez (documented between 1209 and 1253).

Therefore, Gonzalo de Berceo lived around 65 years, and was active in the 13th century, always at the monastery of San Millán, but as a secular priest, not a monk, except during his probable stay in Palencia and in Silos (Figure 2).<sup>1-4</sup>

#### Works

Gonzalo's literary oeuvre is part of the tradition of *mester de clerecía* (clerical minstrel poetry), of which he is the most significant practitioner. Gonzalo employs *cuaderna vía* or monorhyme tetraprophe versification, with stanzas made up of four Alexandrian verses (14 syllables each) separated into two halves (hemistiches) of seven syllables each, with caesurae coinciding with the end of a word, and a single consonant rhyme scheme.

His work is cultured, unlike that of the *mester de juglaría* (troubadour minstrelsy) tradition, but is replete with popular and traditional elements, which Berceo treats with a certain innocence, probably deliberately and consciously, as his work constitutes an orchestrated programme of propaganda, developed at a time when the monastery had lost much of its influence.

The works of Gonzalo de Berceo were conserved at the monastery of San Millán in two documents, one from the second half of the 13th century (ca. 1260) and one from the first half of the 14th century (ca. 1325). These manuscripts were repeatedly copied in the 18th century; Berceo's writings reached us through these copies, as the



Figure 1. Idealised portrait of Berceo. Source: Instituto de Estudios Riojanos.

originals were lost after the order of exlaustration issued during the confiscation of 1835 (fortunately, a considerable part of the 15th-century document was found in the early 20th century, and is conserved at the Royal Spanish Academy).

His work can be classified by thematic area and religious inspiration, in three categories:

1) Hagiographic works: *The life of Saint Aemilianus of La Cogolla (LSA)*, *The life of Saint Dominic of Silos (LSDS)*, *The life of Saint Oria (LSO)*, and *The martyrdom of Saint Lawrence (MSL)*.

2) Marian works: *The miracles of Our lady (MOL)*, *The lamentation of the Virgin (LV)*, and *The praises of Our Lady (POL)*.

3) Paedagogical works: *The sacrifice of the mass (SM)*, *The signs which will appear before judgement day*, and the translations of three *Hymns (H-I, H-II, and H-III)*.

<sup>A</sup>Manuscript P (Bibliothèque Nationale de Paris, ms. esp. 488).

<sup>B</sup>Translator's note: With the exception of these lines, which are not included in the English translation of the works of Gonzalo de Berceo, all other passages are taken from: de Berceo G. The collected works of Gonzalo de Berceo in English translation. Cash AG, Bartha JK, Mount RT, tr. Tempe (AZ): Arizona Center for Medieval and Renaissance Studies; 2008.



Figure 2. Monastery of San Millán de Suso. Photograph by the author.

Thus, a total of 12 works are universally recognised by researchers to have been written by Berceo.<sup>5-10</sup> His authorship of *Libro de Alexandre* is no longer recognised.

### 1. Paedagogical works

*The sacrifice of the mass* comprises 297 stanzas, *The signs which will appear before judgement day* is made up of 77, and the three *Hymns* comprise seven stanzas each. References to disease in the paedagogical works are scarce and non-specific.

### 2. Marian works

*The miracles of Our Lady*<sup>11-15</sup> (Figure 3) is a compilation of 25 miracles performed by the Virgin Mary, recounted over 911 stanzas. Written between 1246 and 1255, they include information from the collections of miracles (*miracula*) that circulated throughout the Christian world, and particularly ms. 110 of the National Library of Spain,<sup>16,17</sup> ms. Alcobacense 149 of the National Library of Portugal,<sup>18</sup> and codex 879 of the La Seo cathedral archive in Zaragoza,<sup>19</sup> as well as ms. Thott 128 in Copenhagen.<sup>20</sup>

Although the miracles are a rich source of information on disease and health, with many describing the healing of diseases (which has come to be known as hagiotherapy), the miracles performed by the Virgin Mary rarely

fall into this category. Rather, they tend to be related to other types of problems, which are solved or pardoned by the intervention of the Virgin; the people involved share a love for her, despite deviating from norms (“The devout thief,” “The simple cleric,” “The fornicating sexton,” “The pregnant abbess,” etc).

*The lamentation of the Virgin* comprises 210 stanzas recounting the sorrow of the Virgin during the Passion of Christ. *The praises of Our Lady* is made up of 233 stanzas describing the life of the Virgin Mary. This was Berceo’s sixth work, and was written around 1242.

### 3. Hagiographic works

These works include biographies of three saints related to the monastery of San Millán (Aemilianus or Millán, Dominic, and Oria or Aurea), as well as the text on the martyrdom of Saint Lawrence.

#### *The life of Saint Aemilianus of La Cogolla*

This work’s 489 stanzas recount the biography of Saint Aemilianus (474-574) (Figure 4), based on the *Vita beati Emilianiani* by Saint Braulio of Zaragoza.<sup>21,22</sup> The work is divided into three books, with the first narrating the saint’s life (“Here begins the history of San Millán turned into Romance from Latin, composed by Master

Gonzalo de Berceo”), and the second and third describing his thaumaturgic activity: “The living miracles and death of St. Millán” and “San Millán’s posthumous miracles and vows.” This was probably Berceo’s first work, and was written between 1230 and 1236. The latter two books, comprising stanzas 109 to 489, include medical references.

#### *The life of Saint Dominic of Silos*

Like *The life of Saint Aemilianus of La Cogolla*, this work is split into three books (Figure 5). It is the longest work, comprising 777 stanzas (three times the number 7). Written between 1230 and 1237, it was based on the 11th-century work *Vita beati Dominici confessoris Christi et abbatis* by Grimaldus,<sup>23</sup> a disciple of Saint Dominic (ca. 1000-1073). The second and third books recount the miracles performed by Dominic in life (st. 289-532) and in death (st. 533-777).

#### *The life of Saint Oria*

Aurea, or Oria in colloquial language, was born in Villavelayo in 1042 or 1043, and died in 1070. Around her tenth birthday, she was received by the abbot of the San Millán monastery, don Gonzalo. Over 205 stanzas, Berceo gives an account not of Aurea’s biography, but rather of her celestial visions, based on a lost biography by the monk Munno, who was the saint’s confessor. Aurea was the first documented anchoress. This was Berceo’s final and most elaborate work.<sup>24-27</sup>

Stanzas 316-333 of *The life of Saint Dominic of Silos* tell the story of another Aurea, also an anchoress, but who lived in Silos (Aurea Silense); the Aurea from the poem is a different person (Aurea Emilianense). Some researchers have confounded the two.<sup>28</sup>

I fully agree, of course, with the judgement of Menéndez Pelayo, who considers *The life of Saint Oria* to be the oldest example of mystical literature in Spain.<sup>29</sup>

#### *The martyrdom of Saint Lawrence*

Over 105 stanzas, this work recounts the saint’s martyrdom, and thus corresponds better to the “passio” genre than to “vita.” It is probably related to the monastery of San Lorenzo, close to the monastery of San Miguel de Pedroso (both of which were dependent under the San Millán monastery) and which in Berceo’s day was subject to disputes between the villages of San Millán and

Belorado, with the poem being intended to restate San Millán’s rights over the monastery. The text contains imprecise references to diseases including blindness, the term *dolientes* (“afflicted,” a synonym of “sufferers”), and difficulty walking.

*The life of Saint Aemilianus of La Cogolla* and *The life of Saint Dominic of Silos* include a multitude of miracles that, unlike the *The miracles of Our Lady*, are mostly related to the curing of various diseases and afflictions, and constitute a valuable source of information on disease and its characterisation at the time.

The entire oeuvre of Berceo, including the elaborate late work *The life of Saint Oria*, served as propaganda, a fact that is patent in the poems about the lives of Saint Aemilianus and Saint Dominic of Silos.<sup>30</sup>

### Material and methods

Berceo’s works were analysed with a critical reading from a neurological and neuropsychiatric perspective.

### Results

#### *Non-specific references to disease and pain*

In addition to disease, sickness, etc, Berceo uses terms including *menguado* (diminished, lacking), *entecado* (sick, weak), *maletía* (sickness), *guarir* (cure), *tollir* (remove, heal), and *sanedat* (health).

“who are either in danger or diminished in health,”  
(SM, st. 105)

“remove the evils that hold us fast,”  
(H-II, st. 3)

“The sick who came to Him seeking health  
he sent away healed, joyful and happy;”  
(LV, st. 65)

“His holy sermons were so gifted  
that they healed the sick and freed them from sin,”  
(LV, st. 66)

“all the sick found marvelous help.”  
(LSA, st. 316)

“During the transfer of that brother and his sisters,  
many sick persons were healed of their pains,  
some in their feet and others in their hands,  
for which Christian men and women gave thanks to God.”  
(LSDS, st. 275)

“he removed every illness from the sick,  
and gave to the blind sight and health.

If he laid his hands upon the infirm,  
those who were afflicted were instantly healed;  
those who before could hardly walk on level ground  
were afterwards out playing ball in the sun.”

[...]  
they healed the sick, they fed the poor,  
they gave sight to the blind, they clothed the naked;”  
(MSL, st. 47-49)

“If they came sick they indeed returned healed;  
[...]  
countless were the many who were cured by him.”  
(MSL, st. 85)

“He healed the sick of every illness,  
and worked miracles on blind people every day.”  
(MSL, st. 90)

### *References to the senses: diseases of the senses*

The term *seso*, in Berceo’s work, has a dual meaning: on the one hand, “sense,” and on the other, “knowledge.”

“Five bodily senses that make us sin,  
sight, hearing, smell, taste,  
and that of the hands which we call touch.”  
(MOL, st. 121)

### *Blindness*

Due to its functional repercussions, vision loss is the most frequently mentioned sensory alteration in all manner of ancient documents.

Despite this, references to loss of hearing and the remaining senses, are minimal, with the exception of the references to sensory alterations included in other sections.

“O hardhearted people, both deaf and blind,”  
(POL, st. 15)

“Give light to the blind who are sinful,”  
(H-II, st. 3)

“She lost her vision, for which he was troubled,  
because he felt the lack of her good service.”  
(LSA, st. 154)

“The blind girl was led; she could not see.  
She came to the sanctuary where she hoped for light.”  
(LSA, st. 155)

“Her vision was clearer than ever before.”  
(LSA, st. 156)

“Those who were deprived of their eyes saw.”  
(LSA, st. 316)

“In a village there were two very unfortunate blind men.  
They were living in great misery, lacking everything.  
They heard this news, these good announcements,  
and had great faith that they would be restored to sight.”  
(LSA, st. 323)

“When their sight returned, they were so unaccustomed  
to seeing // that they were suddenly afraid.  
The whole day they were stunned  
and could not regain consciousness at all.

They came to after the entire day had passed.  
They saw that their petition had ended favorably,  
and gave thanks to God and to the honored man.  
They returned to their homes, not needing their guides.”  
(LSA, st. 329-330)

### *Other references*

“That He should give this unhappy man his sight,  
and remove from his ears the pain he was suffering.”  
(LSDS, st. 345)

“A count from Galicia who was a person of power,  
whose name was Pelayo, a man strong and sturdy,  
became hindered by the loss of his sight,  
for a man who cannot see ought not to have been born.”  
(LSDS, st. 388)

“On that same day that she was healed,  
a blind man from Espeja recovered his sight there;  
Juan was his name, if another told the truth,  
the one who wrote this story first.”  
(LSDS, st. 571)

“There was a poor blind woman from Asturias,  
a native of the town that is called Cornejana;  
she saw as much in the morning as in early evening;  
for a good thirty months she had not been well.”  
(LSDS, st. 572)

“According to the text, her name was Sancha;  
the unfortunate woman lived sorely distressed,  
for anyone who does not see is in dire straits:  
he does not even know where is Burgos or Extremadura.”  
(LSDS, st. 573)

“In Agosín, there lived another blind woman,  
María was her name: she lived in great affliction;  
she went to every possible shrine that she knew of,  
but she never got better, for it was not God’s will.”  
(LSDS, st. 578)

“A blind man stopped there, wherever he was from —  
it is not explained very well in the manuscript,  
for the writing is poor and the Latin obscure:  
by the worthy St. Martin, I could not make it out.”  
(LSDS, st. 609)

“In Agosín there lived a suffering blind woman: she was named María from when she was baptized; her sight was destroyed by a severe illness; where she lying in jail she would not be more confined.” (LSDS, st. 622)

“Among those companions in the home of Narcissus, there was a good man who had lost his sight; [...]  
Lay your hands on me and save me from ridicule.

He laid his hands on him and uttered his prayer:

[...]

You Who gave sight to the man born blind,

[...]

[...]

his whole blindness was healed by faith;”

(MSL, st. 59-61)

“There was a knight whose eyes were blind;”

(MSL, st. 80)

### Otalgia

On at least two occasions, Berceo describes earache, even referring to the intensity of the symptom.

“His name was Juan, if you care to know; he lived in great sadness which you can imagine; and besides that affliction which you have heard of, his ears ached so badly he was climbing the walls.” (LSDS, st. 337)

“That He should give this unhappy man his sight, and remove from his ears the pain he was suffering.” (LSDS, st. 345)

### Headache

“This cleric fell gravely ill; his eyes were about to pop out of his head; he considered his journey to be complete” (MOL, st. 123)

“She suffered daily from so many headaches that she was always more ill than she was well; [...]  
[...]

He uttered certain words praying over the widow, and she instantly lost all her daily pains.”

(MSL, st. 52-53)

### Memory, judgement, reasoning, orientation, confusional syndrome

Miracle 24, “The robbed church,” describes alterations of memory, judgement, and reasoning (*seso* = *sensu* = sense,

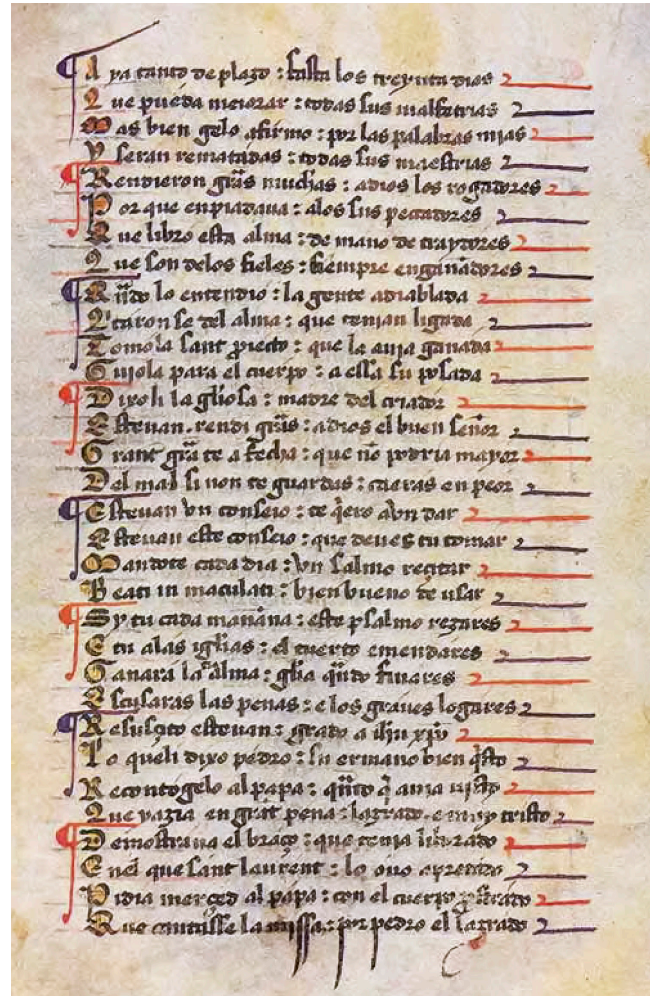


Figure 3. *Miracles of Our Lady*. Fourteenth century. Source: Real Academia Española.

knowledge), disorientation (individuals wandering in circles, unable to find the door), etc.

“They lost their memory and they well deserved to; the layman and the cleric lost all their wits. They went from the door; they could not find it. Those born for evil went wandering in circles.” (MOL, st. 720)

“They went groping from corner to corner” (MOL, st. 722)

The miracles performed in life by Saint Dominic include that featuring García Muñoz de Yécora, who presented memory loss and generalised loss of strength as divine punishment:

“Hardly could the prayer be brought to conclusion,  
when the fury of God fell upon the man;  
in no time at all he had lost his mind,  
and the strength of his body was completely spent.”  
(LSDS, st. 426)

Stanzas 194-195 of *The lamentation of the Virgin* describe the misfortunes befalling the soldiers guarding the Holy Sepulchre, which are difficult to interpret, but are described with medical terminology that initially alludes to a confusional syndrome; however, the syndrome appears to have been followed by a collective loss of consciousness.

“Such a fright and such evil fortune befell them,  
they lost their consciousness and all their wits:  
they all tumbled dead upon the bare ground;”  
(LV, st. 194)

“Much later the unfortunate men came to,  
unable to see from their eyes all injured;  
they bumped into each other as if in a spell,  
and all their laughter turned to agonized weeping.”  
(LV, st. 195)

The guards were slow to awaken, and were baffled (“weeping”) and “injured,” as though they had been poisoned.

#### *Loss of strength with intact memory (physiological ageing)*

Prior to the death of Saint Dominic, Berceo describes the saint’s ageing, with progressive loss of strength but with memory being spared. Today, this process would be described as physiological ageing.

“He was losing his strength but not his faculties;  
he was aware that it was time for his ultimate release,  
for he received a message from the good King of Glory  
that he should know he was close to victory.”  
(LSDS, st. 491)

#### *Cognitive impairment*

“A stupid knight, abandoned by God,  
named Abundancio, spoke very badly.  
He said to him, ‘Crazy, forgetful old man,  
you have returned to the understanding of a child.’”  
(LSA, st. 284)

#### *Ataxia*

“The mad, star-crossed ones, abandoned by God,  
were going around like drunkards all dazed.  
Now they fell on their faces, now on their sides;”  
(MOL, estr. 723)

#### *Lipothymia, syncope*

*The lamentation of the Virgin* recounts how the Virgin Mary presented two vasovagal episodes during her son’s martyrdom, describing paleness (“my blood ran cold”), reduced level of consciousness (“I lay in a faint”), recovery of consciousness (“I came to my senses”), and the suddenness of onset (“fell dead on the ground”).

“my blood ran cold and I lay in a faint;  
I would rather have died than endure such a life:”  
(LV, st. 17)

“When I came to my senses, I looked all around:”  
(LV, st. 18)

“When the Glorious Lord gave up His soul,  
[...]  
fell dead on the ground as if violently ill,”  
(LV, st. 109)

Her companions tried to revert this syncope with the most common manoeuvre:

“Those who were near her, in order to revive her,  
Splashed her with cold water, but she did not come to.”  
(LV, st. 111)

“They splashed cold water on her eyes and face,  
but no matter how they shouted Mary did not respond,  
for she was stricken by a dreadful illness  
that no doctor’s medicine could possibly help.”  
(LV, st. 112)

#### *Paralysis*

Paralytic symptoms are common, with the descriptions often including details of their functional and even social repercussions, their duration, etc. The third miracle of Saint Aemilianus describes a very sick woman, who was lame and unable to leave bed, lying prostrate on the ground, unable to sit or stand up.

“Among his miracles is the third one.  
We want to tell you about a paralytic.  
She was all crippled and had no control.  
She lay prostrate on her bed because she could not walk.”  
(LSA, st. 132)

“The sick, suffering lady was placed at the door.  
She was very exhausted from sickness and suffering.  
The poor woman lay prostrate on the ground,  
because she could not stand up at all.”  
(LSA, st. 134)



Figure 4. Cenotaph of Sain Aemilianus, Monastery of San Millán de Suso. Late 12th century. Photograph by the author.

“He extended his holy hand and gave her his blessing.  
The sick lady was freed from her affliction.  
She returned home cured without any lesions.”  
(LSA, st. 136)

The fifth miracle involved a lame woman from Peña Amaya, who since childhood had been unable to control her legs or to walk even short distances.

“In that same land of that *peña real*,  
there was a native of the place who was crippled.  
Since her childhood, she did not control her feet.  
She could not go from her bed to the corral for a  
thousand marks.”  
(LSA, st. 138)

“Save this wretched one, this anguished body,  
a body which is dispossessed of its feet.”  
(LSA, st. 146)

“A young man in the house, keeper of the grain,  
almost lost the use of his hand due to pain;  
[...]  
he was instantly cured and had never been better.”  
(LSDS, st. 443)

“We want to tell you of another paralytic  
who had no power to command her limbs,  
a native of Fuentoria in my opinion,  
and I think I am correct that her name was María.

She could not walk on her feet or grip with her hands,  
even if she were put in charge of Moors and Christians;  
because she lay in such agony a good many summers,  
she had been severely weakened by her daily pains.

They thought there was no help for her in this life;  
she was reduced to nothing but skin and bones;  
she suffered alike on Sundays and weekdays;  
all those around her were grieved by her affliction.”  
(LSDS, st. 581-583)



“The night having passed, immediately at dawn they celebrated Mass keeping up their prayers; her pains were vanishing little by little; the paralytic said, ‘I give praise to God.’

The paralytic woman was healed from the illness, but could not overcome the weakness so instantly; yet Christ was quick to take pity on her, and she returned to her neighborhood on her own feet.” (LSDS, st. 588-589)

### *Lameness, limping*

The texts include various non-specific allusions to functional alterations and/or complete or partial loss of a limb.

“the lame, and the crippled, who had need of it.” (LSA, st. 278)

“The lame and crippled returned cured, [...]” (LSA, st. 316)

### *Deformities (dystonia?)*

“There was a disabled man from Tabladiello: according to the text his name was Ananías; he was severely afflicted with epilepsy; for a good four months he had been lying abed.

The unhappy man had his arms doubled up, stiffened and bent right up to his chest: he could not extend them or even raise them, or put in his mouth even one or two morsels.

As news usually spreads by word of mouth about healing the sick and restoring their health, from where he lay, the sick man came to know of how St. Dominic had such great power.” (LSDS, st. 549-551)

“The pleas that they made were heard by God; his arms that had been crippled were released; the pains that severely afflicted him were calmed; those who surrounded him were weeping profusely.

His limbs were all healed of their physical pains: Ananías raised both of his hands up to God; those good Christians sang to God their praises; The people who came with him now were content.

As the sick man was in a very weakened state, he could not depart until he had gained strength; when he dared to walk, congratulated by all, he returned to Tabladiello joyful and content.” (LSDS, st. 554-556)

“Fruela from Coriel and Muño from Villanueva were both crippled, according to the text; they both lay bound like prisoners in a cave; if they were made kings they would not go to Burueva.” (LSDS, st. 603)

“Thanks to the good confessor they soon recovered, they soon obtained what they asked from God; their feet were healed and they could walk again; joyful and content they returned to their homes.” (LSDS, st. 605)

“Two women who were crippled, one in one hand, the other in both, were healed by that good highlander; happy the pomegranate tree that bore such a pomegranate, happy the pomegranate fruit that produced such a fine seed.

The one from Yécola was called María; her arms were just as thin as a board; she could not grasp a thing or hold it with her hands; any person who saw her would consider her unfortunate.

The text does not tell us where the other one was from, but at Saturday vespers she did one thing and another: she washed her hair and swept out her yard, and guilty of that, she fell into such danger.” (LSDS, st. 675-677)

### *Demonic possession*

Demonic possession (Figure 6) is the most frequent affliction in medieval literature.

“Tüencio was the name of a famous man, a man of good manners who had good sense. He had a very bad problem, since one of his beloved slaves was powerfully oppressed by the devil.” (LSA, st. 161)

“He said to him, ‘There are five of us who live here. We have these names; we serve this master. We have been together here a long time, but we fear that you are to move us.’” (LSA, st. 165)

“Later they brought him another man possessed, a slave of Eugenio, a worthy man. He fell at the feet of the honored confessor, begging for advice, because he was battered.” (LSA, st. 169)

“A lady, Proseria, was possessed. She was very harassed by two strong demons. She was married in the church to a good husband. Alas, this good man had this grievous defect.

The good man’s name was Nepociano. He had a twofold demon and therefore was not healthy.

They assaulted both of them daily and so  
they lived in great suffering all year round.

All these demons had certain mannerisms.  
They acted like brothers, making certain gestures.  
They each did the same thing, taking turns,  
and were companions in all their behavior.”  
(LSA, st. 171-173)

“Another possessed woman was Colomba,  
the daughter of Máximo; this is a proven truth.  
She endured great suffering and lived a grievous life.  
If death would come to her, she would consider //  
herself fortunate.”  
(LSA, st. 177)

“There was a noble senator from Parpalinas;  
he was called Onorio, a man of great worth.  
He suffered a great irritation: you never saw a greater one.  
Only mentioning it to you gives my mouth a bad taste.

In the house of this potentate was living  
a malignant demon, full of malice.  
He caused disgusting filth in the dwelling;  
he considered it as his own property.”  
(LSA, st. 181-182)

“Many possessed were cured at the sepulcher  
(LSA, st. 316)

“When the blind man had recovered his sight,  
he took leave of the body and went to his home;  
they immediately brought a demoniac in,  
a woman abused and afflicted by the devil.

If you care to know the name of the lady,  
then you should believe that her name was Orfresa;  
we did not want to put the town down in writing,  
for it does not have an attractive name.”  
(LSDS, st. 612-613)

“He was often possessed by a cruel demon  
who now made him deaf, now made him mute;  
at times he made him utter a piercing cry;  
the wicked guest caused him to be considered crazy.

If it were not for the fact that he was kept tied down,  
he would have been up to some nasty tricks;  
he would have gladly done harm to himself or another;  
Since he had no sense he was bold and brazen.

They lived thus troubled with him day and night:  
if they let him free he committed terrible folly;  
his aunts and uncles would have rather seen him dead,  
for he uttered words that were crazy and impious.”  
(LSDS, st. 627-629)

“One was from Olmillos, Oveña was her name;  
another was from Yécola, and she was called María;

the third poor woman was named Eulalia:  
each one of those three was a demoniac.

All of those women were possessed by the devil:  
they lived a life of great suffering and misery;  
the poor women were a nuisance to people,  
for they often fell to the ground in convulsions.

They bore great suffering in many ways,  
walking the highways with nothing to eat,  
and disgracing themselves by falling into flames;  
the poor women suffered from impaired vision.

There was no medicine that could heal them,  
no pact nor spell nor any other heresy,  
no vigils nor tears nor any long pilgrimage,  
except for St. Dominic, patron of monks.”  
(LSDS, st. 637-640)

“There was a demoniac from Peña Alba  
who was suffering severely for her sins;  
she was made mute by her grave illness,  
and her faculties were greatly diminished.

She was often seized by the poisonous beast,  
and she wandered astray like a crazy woman;  
no help could be found anywhere to heal her;  
her parents would rather have seen her dead.

One day where she was wandering astray like a lunatic,  
she told this story with her very own lips:  
a rather large figure placed himself before her;  
he was clothed in a dalmatic whiter than a veil.”  
(LSDS, st. 679-681)

“While she was at Mass the devil seized her;  
he hurled her to the ground and dragged //  
her painfully around,  
twisting her mouth which was spewing foam,  
while making ugly faces and speaking vile language.”  
(LSDS, st. 690)

“The sick woman was healed and freed from the devil:  
she completely recovered her speech that was impaired;  
she returned to the state of good health she //  
had been robbed of;  
she was over her illness and went back to Peña Alba.”  
(LSDS, st. 699)

### *Tourette syndrome*

From a neurological perspective, one of the most interesting texts is a passage from the second book of *The life of Saint Aemilianus of La Cogolla*, in which Berceo recounts the miracles performed by the saint during his life (Figure 7).

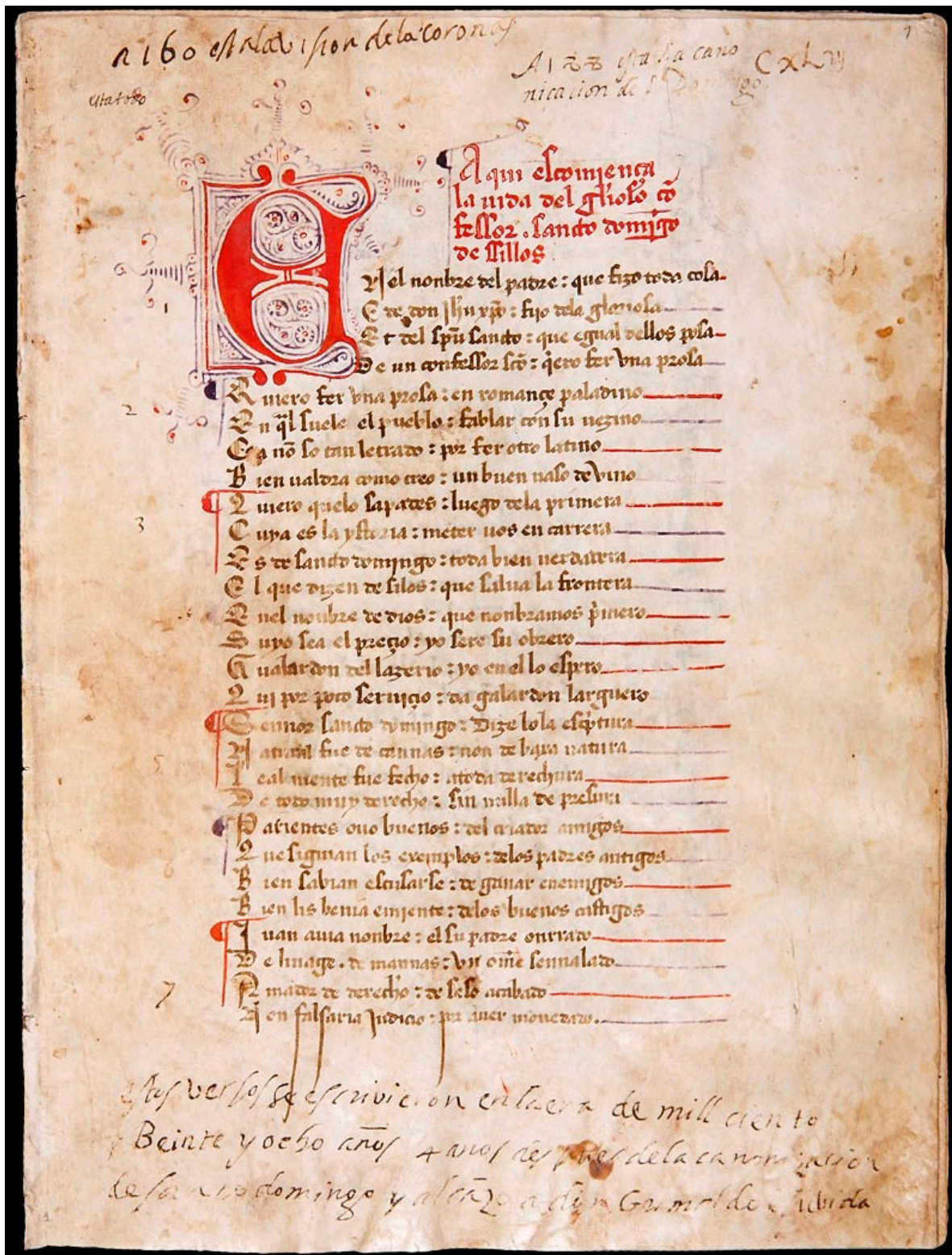


Figure 5. "Here begins the history of the glorious Saint Dominic of Silos" (book 1 of *The life of Saint Dominic of Silos*). Fourteenth century. Source: Real Academia Española.

“Scarcely had San Millán achieved this,  
when they brought a cleric possessed by the devil.  
He was a deacon ordained by the bishop.  
He was humiliated by his companions.

The devil made him say crazy things:  
besides the words, he did other dirty things.  
The sickness had many bad characteristics,  
whence the sick one made many faces.

The holy man saw a very fierce devil.  
He turned to God and said, ‘Oh, glorious King,  
have pity on this cleric, since You are merciful,  
so that he not dwell with such an angry host.’

The devil could not suffer the prayer.  
In total confusion he left the deacon.  
Having received the blessing, the cleric  
returned to his church all safe and sound.”  
(LSA, st. 157-160)

#### *Generalised rigidity (tetanus?)*

“A woman who came from Castro Cisneros,  
who went by the name of María from birth,  
got dressed in her best, got ready her money,  
and went to go shopping with some companions.

She set out on the road indeed well and happy  
I do not know for sure if on foot or on horseback —  
when she suddenly was taken so violently ill  
that she became as stiff and as rigid as a board.

She could not move either one of her feet;  
she could not stretch the fingers of her hands;  
her sight was so blurred that she could not see;  
she had no power over any of her limbs.

Her speech was slurred because of her condition,  
and she uttered many words that were incoherent;  
she knew not where she was nor why she was there:  
those who were with her were sorely distressed.

As her eyes were glassy and her mouth twisted,  
and each of her arms like a crooked stick,  
she could not take a step from the hearth to the door:  
all who truly loved her would have rather seen her dead.”  
(LSDS, st. 290-294)

“that no mustard plaster would heal the lady.”  
(LSDS, st. 295)

“to obtain health for the paralyzed woman.”  
(LSDS, st. 300)

“My friends,’ he said, ‘let us all pray wholeheartedly  
to God for this lady who lies in such straits;  
may He restore her reason and her sight to her;

may she be rid of this affliction and remain //  
unscathed.”  
(LSDS, st. 305)

The patient was cured with hot wine, given “in His divine name.”

#### *Combined speech and hearing impairment (mixed aphasia)*

“A woman who came from the city of Palencia  
fell on dreadful misfortune because of her sins:  
she lost the power of hearing and speech,  
and her faculty of reason was sorely deficient.”  
(LSDS, st. 557)

“He took away both her speech and her hearing;”  
(LSDS, st. 560)

#### *Muteness (“aphasia”)*

With the exception of a few metaphorical allusions to blindness, hearing loss and madness, the only neurological reference in the 233 stanzas of *The praises of Our Lady*, questioned by some authors, is an indirect reference to the “aphasia of Zechariah” in stanza 18.

“Zechariah, the father of him who was precursor,  
spoke of him when he recovered his speech;  
Elizabeth his wife was the one who bore him:  
all of this later was confirmed by the Son.”  
(POL, st. 18)

#### *Withered hand and muteness (stroke?)*

“There was a suffering woman who came from Nebreda:  
she had a withered hand and she was mute;  
she could not use her hand or say a single word;  
she was chronically ill and had plenty of suffering.”  
(LSDS, st. 606)

“He healed the withered hand that she had,  
and he loosened her tongue tied by evil;  
she gave thanks to the father and master of the house;  
she returned to Nebreda freed of her afflictions.”  
(LSDS, st. 608)

#### *Monoparesis (alien hand)*

Berceo’s description of this case must inevitably make neurologists think of the modern concept of alien hand syndrome. However, if we read the text in detail, taking into account the context, we must immediately rule out this possible syndromic diagnosis.

“Ximena de Tordómar lost the use of one hand,  
but which one it was I do not know for certain;  
it resembled dry straw, and the good one fine grain,  
the withered one winter, and the healthy one summer.

The lady Ximena came to entreat the holy body;  
‘Worthy sir and father,’ she said, ‘you see my suffering:  
my hand is more useless than if it belonged to another;  
it affords me no help and keeps me enchained.’”  
(LSDS, st. 617-618)

“The good confessor helped: he healed her hand;  
her arm that was withered became well and healthy;  
if clumsy before, after that it was quick:  
Ximena, now healed, did her weaving in the sunshine.”  
(LSDS, st. 621)

*Probable deficiency disease (possible deficiency-related  
amblyopia and neuropathy?)*

“There was a young man born in Aragón,  
according to the text, his name was Pedro;  
he fell so violently ill it was astonishing:  
no man or woman could give him any help.

His illness was severe and very prolonged;  
no doctor who saw him helped him in the least;  
the people held out little hope for his life,  
for he could not even eat a single bite of food.

From the dreadful affliction his limbs were weakened;  
his hands and his feet were all out of joint;  
his eyes were sunken, his arms without strength;  
his parents were deeply grieved by his trouble.

The unhappy young man finally lost his sight:  
this above all was his greatest impairment;  
the other disability was more bearable;  
without his sight he was inconsolable.

They reached a decision, with the help of God,  
to bring that sick and suffering person  
to the precious tomb of the worthy confessor;  
If he did not help, then all was lost.”  
(LSDS, st. 538-542)

“Thanks to Jesus Christ and the good confessor,  
the sick man was healed of all his suffering,  
but he was so weak that he did not have the strength,  
poor sinner that he was, to walk on his feet.

Together with the health granted him by God,  
Pedro indeed soon recovered his strength;  
he took leave of the monastery and its companions;  
he returned to his home most joyful and healthy.”  
(LSDS, st. 547-548)

“There was another cripple who could not walk,  
and he could not see an inch in front of his nose;  
he lay quietly in everyone’s way like a hindrance;  
he could not get a thing but what he begged for.

Sancho was the name of this crippled man  
who had kept to his bed for a good long time;  
he saw nothing but what was under his roof:  
whatever the reason, he was in a sorry state.”  
(LSDS, st. 597-598)

“Out of love for the confessor, God gave His help:  
He healed the sick man of all his pains;  
indeed his eyesight had never been better,  
and he walked about on his feet just as he pleased.”  
(LSDS, st. 601)

“There was, among the many, an unfortunate woman  
who had a twofold sickness in her body.  
Her feet were numb, her vision clouded;  
the wretched woman lay badly imprisoned.

They anointed her with the oil where she had pain,  
her eyes and her feet causing her to moan.  
She was immediately cured, thanks to the Creator  
and the holy virtue of the holy confessor.”  
(LSA, st. 340-341)

*Epilepsy (“gota coral”)*

Berceo uses the word *gota* on two occasions, once non-specifically in the generic sense of “disease” (the healing of Ananías; LSDS, st. 549-551 et seq.), and once, the instance that concerns us in this section, to refer to epilepsy (though he does not use the term *gota coral* [epilepsy], he does refer indirectly to the concept: “that seizure [*gota*] usually affected his mind”; LSDS, st. 399).

“There was a good man, a native of Gomiél  
named García Muñoz, who had a dreadful illness;  
at times he was seized by an epileptic fit:  
no one who saw it had ever seen the like of it.

That seizure usually affected his mind:  
it took away his intelligence, his speech, and his sight;  
he had no sense nor did he understand reason;  
on his account all lived in great anguish.

He was seized in such a way by the cursed fits  
that he lost every single one of his senses;  
and what was worse for them were the faces he made,  
for many people thought him possessed by the devil.

The wicked thing was of such an evil nature  
that it made his features look terribly disturbed;  
the good man made so many ugly grimaces

that all of his friends lived sorely distressed.”  
(*LSDS*, st. 398-401)

“The disease was one that was advanced and stubborn,  
very difficult to cure and violent in nature;  
there was no doctor who could possibly cure it;  
he said, ‘Help me, Christ, Son of the Glorious Lady.’”  
(*LSDS*, st. 410)

“Even though the seizure was stubborn to heal,”  
(*LSDS*, st. 416)

“García was healed, thanks to God;”  
(*LSDS*, st. 417)

“Hardly could the prayer be brought to conclusion,  
when the fury of God fell upon the man;  
in no time at all he had lost his mind,  
and the strength of his body was completely spent.”  
(*LSDS*, st. 426)

#### *Infernal fire, St. Martial’s fire (ergotism)*

In Miracle 17 of *The miracles of Our Lady*, “Saint Mary’s Church profaned,” Berceo recounts the punishment inflicted by Mary on three knights who killed a fourth in a church consecrated to the Virgin Mary, where he had sought asylum.

“God sent upon them an infernal fire;  
it did not flame, yet it burned like St. Martial’s fire.  
It burned their limbs in a deadly way,  
and they cried out loudly, ‘Holy Mary, help!’”  
(*MOL*, st. 385)

“With this assault they were badly battered;  
they lost feet and hands and wound up deformed,  
their legs and arms drawn up to their chests.  
Holy Mary was collecting her due.”  
(*MOL*, st. 386)

The knights repented and prayed for Mary’s forgiveness; the Virgin, moved, forgave them and their symptoms disappeared, although they were left with sequelae.

“The fires that were making them burn died down;  
they had a greater cure than they were wont to have.”  
(*MOL*, st. 396)

“The fires died down; they felt no more pain,  
but never again were they fully masters of their limbs;  
they were forever deformed, forever beggars;  
they always proclaimed themselves as great sinners.”  
(*MOL*, st. 397)

Employing a resource that saw extensive use centuries later in literature and the graphic and visual arts, Berceo uses a single timeframe to present both the acute phase

of the disease, fundamentally characterised by distal limb pain and burning sensation, and the chronic phase (sequelae), with motor deficits (“but never again were they fully masters of their limbs”), limb contractures, and dystonic postures (“deformed, their legs and arms drawn up to their chests”).

#### *Leprosy*

Perhaps the most widespread disease at the time was leprosy, a disease characterised by a marked diagnostic ambiguity, as the term has been used to designate numerous diseases over the centuries. However, its description in works on the miracles of the Virgin Mary and of the saints, and therefore in the works of Berceo, does not coincide with this impression.

The miracles of Saint Dominic include the saint’s use of holy salt water to heal a *gafo* (leper) with badly shredded skin.

“Having finished his sermon, the worthy confessor was approached by a sick man in very great suffering: a leper from the area and severely disfigured, ashamed, he had hardly the courage to appear.

He fell at his feet and began to entreat him,  
‘I come to you, Father, to ask for healing;  
if you would only deign to say a Mass for me,

I believe I would become healthy and well.’  
The merciful father was grieved for the poor man;  
he went to the church of the worthy St. Martin;  
when he had completed the divine office,  
the leper had no need of any other advocate.

At the end of the Mass the good priest  
blessed salt and water with his sacred hand;  
he poured it on the sick man who was instantly so healed  
that not a trace of the leprosy appeared any longer.”  
(*LSDS*, st. 475-478)

#### *Macropsia/micropsia. Alice in Wonderland syndrome*

“The confirmed traitor took the form of a serpent,  
and, raising his neck, placed himself before her;  
now he was small and now he was huge,  
at times very thin and at times very thick.”  
(*LSDS*, st. 328)

#### *The visions of Saint Oria (ecstatic epilepsy?)*

“That cannot be, Oria, not this time;  
you must return to your body and remain cloistered,  
until your entire life is over.”  
(*LSO*, st. 98)



Figure 6. Saint Aemilianus exorcising various demoniacs. Altarpiece of Saint Christopher. Late 13th century. Source: ©Museo Nacional del Prado.

“She opened her eyes and looked all around,  
but she did not see the martyrs and was very displeased.  
She saw herself far removed from such great sweetness;  
she felt very great affliction and extreme sorrow.”  
(*LSO*, st. 109)

Eleven months later, Oria had another vision:

“a great boon came to her; never did a better come,  
sweeter and more pleasing than bread or wine.”  
(*LSO*, st. 116)

“Within a few days you will become very sick.  
You will be overcome by a fatal illness.”  
(*LSO*, st. 135)

Shortly before her death, Oria had a third vision:

“She slept a little because she was exhausted.  
She was transported to the Mount of Olives in a vision,”  
(*LSO*, st. 139)

“With this the sick one became very distressed.  
At that time, she did not want to wake up;  
for she was in great glory, in a delightful place,”  
(*LSO*, st. 145)

“for she was in great glory, among good people,  
and did not feel a bit of all the pain.”  
(*LSO*, st. 146)

Tables 1-3 summarise the most relevant references to neurological signs in the works of Berceo, particularly in the hagiographic works recounting the miracles of Saint Aemilianus and Saint Dominic of Silos.

## Discussion

The works of Berceo have been studied from linguistic, literary, and historical perspectives, and have generated a vast body of literature, from prose adaptations to such original studies as the thesis of Erik Alder (University of Kansas, 2017),<sup>31</sup> which explores relationships between Berceo’s hagiographic works and “twentieth-century Latin American activism literature known as *testimonio*” and such figures as Rigoberta Menchú and Subcomandante Marcos.

It should also be noted that the miracles of both Saint Aemilianus and Saint Dominic, and particularly those of the former, are recorded in art, in the ivories of the reliquary ark of Saint Aemilianus of La Cogolla and in some retables and paintings (Figure 8).<sup>32,33</sup>

Despite the numerous references to disease in Berceo’s work, very few studies have analysed it from a medical perspective.

The first such study is a rather superficial and ingenuous article published in 1955.<sup>34</sup>

The second is a general, descriptive approach, lacking a medical analysis of the diseases. This study by Denis Menjot,<sup>35</sup> *Les miracles de Saint Millan de la Cogolla du VIe au XIIIe siècle*, was published in 1979. The author uses Saint Braulio’s *Vita sancti Emiliani* as a starting point. In his analysis of the saint’s thaumaturgic activity, he notes the prominence of therapeutic miracles, which account for 13 (10 in life and 3 posthumous) of a total of 24 miracles. Menjot analyses the patients healed:

- six cases of demonic possession (all during Saint Aemilianus’ lifetime);
- four cases of blindness (three posthumous);
- one case of paralysis (during his lifetime);
- two cripples (one during his lifetime and one posthumous);
- one case of tumour or oedema (sic).

Without performing a detailed analysis of each case, he concludes, among other things, that from a medical perspective, the patients always presented chronic diseases; he attributes great importance to the psychosomatic component, and establishes that, despite their small number, the miracles were equitably distributed by sex and social status.

Six years after the communication at the Annual Meeting of the Spanish Society of Neurology of the preliminary findings of the present study, Carlos and Fernando Espí Forcén<sup>36</sup> published an extraordinary article, one of three that subsequently made up the doctoral thesis of one of the brothers.<sup>37</sup> The study focuses exclusively on demonic possession, which is analysed from a psychiatric perspective in selected cases from medieval hagiographic literature. Among these, the study exhaustively reviews the miracles of Saint Aemilianus and Saint Dominic of Silos.

I agree with some of the proposed diagnoses. I am aware of the bias associated with the perspective from which these works have been analysed (psychiatry, in the case of the study by Espí Forcén and Espí Forcén, and primarily neurology as well as neuropsychiatry, in my own). I agree with the proposed diagnosis for the first case of demonic possession cured by Saint Aemilianus (*LSA*, st. 157-160): this is almost certainly a case of Tourette syndrome (this hypothesis was previously proposed at the aforementioned Annual Meeting of the Spanish Society



**Table 1.** Summary of the “neurological miracles” of Saint Dominic according to *The life of Saint Dominic of Silos* (1230-1237), by Gonzalo de Berceo.

Semiology	Interpretation	Possible diagnosis	Location in the text (stanza)
[...] taken so violently ill [...]	Suddenness, severity		
[...] she became as stiff and as rigid as a board.	Generalised rigidity		
[...] she could not move either one of her feet; [...]	Foot/leg paralysis		
She could not stretch the fingers of her hands; [...]	Stretch = extend Carpal spasm/contracture		
[...] blurred sight [...]		Tetanus	290-314
[...] she had no power over any of her limbs [...]	Inability to move all four limbs		
Her speech was slurred [...]	Mouth deformity		
[...] she uttered many words that where incoherent; [...]	She did not know what she was saying		
[...] her eyes were glassy [...]			
[...] her mouth twisted [...]	Twisted mouth		
[...] now he was small and now he was huge, [...]	He changed in size	Metamorphopsia. Micropsia/macropsia	328
[...] at times very thin and at times very thick.	It was very thin at times and very thick at others.	Alice in Wonderland syndrome	
[...] there was a blind man [...]; our text does not say how he was blinded: [...]	Blindness of unknown cause	Blindness + earache	
[...] and besides that affliction [...] his ears ached so badly he was climbing the walls.	He also had severe earache	?	336-50
A count from Galicia [...] whose name was Pelayo, [...] became hindered by the loss of his sight, [...]	Blindness		388-396
[...] a dreadful illness; at times he was seized by an epileptic fit: [...]	Severe recurrent illness		
That seizure usually affected his mind: [...]	Gota coral		
[...] it took away his intelligence, his speech, and his sight; he had no sense [...] that he lost every single one of his senses; [...]	All functions and sense were affected. Loss of consciousness	Gota coral Epilepsy	398-417
[...] the faces he made, [...] many people thought him possessed by the devil.	Facial movement/expressions of demonic possession		
Even though the seizure was stubborn to heal, [...]	“Refractory seizures”		
[...] lost the use of his hand due to pain; [...]		Carpal tunnel syndrome?	443
[...] a leper from the area and severely disfigured, [...]	Leprosy Disfigured ( <i>afollado</i> ) = skin flaking		475-478
[...] that not a trace of the leprosy appeared any longer. Leper		Psoriasis?	
His illness was severe and very prolonged; [...]	Severe disease, long duration		
[...] his limbs were weakened; [...]	Muscular atrophy Cachexia		
[...] his hands and his feet were all out of joint; [...]	Dislocated	Deficiency syndrome?	538-548
[...] his eyes were sunken, his arms without strength; [...]	Sunken eyes, weakened arms		
[...] lost his sight [...]	Blindness		
[...] the pain in his legs [...]			
[...] A disabled man [...] afflicted with epilepsy; [...]	Affected with a disabling disease		
[...] had been lying abed.	Unable to leave bed		
[...] his arms doubled up, stiffened and bent right up to his chest: [...]	Arms were rigid, flexed, and pressed against the body.	Deficiency syndrome?	549-556
[...] or put in his mouth [...]	Dysphagia?		
[...] pains that severely afflicted him [...]			
[...] she lost the power of hearing and speech, [...]	She was unable to hear or to speak.	Mixed aphasia?	
[...] her faculty of reason was sorely deficient.	Severely impaired judgement	Stroke?	557-570
He took away both her speech and her hearing, [...]			
[...] they laid the sick woman upon the flat ground [...]	Inability to move?		

Table 1 Continued →

Table 1 Continued →

Semiology	Interpretation	Possible diagnosis	Location in the text (stanza)
Blindness			571 572-277 578-580
<i>[...] who had no power to command her limbs [...]</i>	Paralytic		
<i>She could not walk on her feet or grip with her hands, [...]</i>	Paralysis of all four limbs		
<i>[...] she lay [...] a good many summers, [...]</i> <i>[...] severely weakened by her [...] daily pains.</i>	Unable to leave bed for a long time	Cerebral palsy ¿Síndrome carencial?	581-589
<i>[...] reduced to nothing but skin and bones; [...]</i>	Cachexia		
<i>[...] cripple [...]</i>	Deformity		
<i>[...] could not walk, [...]</i> <i>[...] unable to see from their eyes [...]</i>		Deficiency syndrome?	598-602
<i>[...] deformed [...]</i> <i>[...] lay bound [...]</i>		Deficiency syndrome? Cerebral palsy? Lathyrism?	603-605
<i>[...] she had a withered hand [...]</i>	Paralysis of the hand		
<i>[...] she was mute; [...]</i>	Language impairment	Dysarthria-clumsy hand syndrome?	
<i>[...] could not use her hand [...]</i> <i>[...] or say a single word [...]</i>	Hand (arm?) paralysis Motor aphasia	Left middle cerebral artery stroke	606-608
Blindness			609-612
<i>[...] abused and afflicted by the devil.</i>	Demonic possession	?	613-616
<i>[...] lost the use of one hand, [...]</i> <i>Sir, do pray for this unfortunate sinner, [...]</i>	Left hand No language impairment	“Withered hand” syndrome Stroke	617-621
<i>[...] her arm that was withered [...]</i>	“Withered” hand/arm		
Blindness			622-625
<i>[...] demoniac [...]</i>	Demonic possession		
<i>He was often possessed [...]</i>	Recurrence		
<i>[...] who now made him deaf, now made him mute; [...]</i> <i>[...] at times he made him utter a piercing cry; [...]</i>		Epileptic seizures?	626-635
<i>[...] caused him to be considered crazy.</i>	Insanity	Psychotic episodes?	
<i>[...] he would have gladly done harm to himself or another; [...]</i> <i>[...] since he had no sense he was bold and brazen.</i>	Dangerous to himself or others He was very daring due to his lack of understanding.		
<i>[...] each one of those three was a demoniac.</i> <i>[...] they often fell to the ground in convulsions.</i>	Deformities Atrophy	Epilepsy	636-643
<i>[...] and disgracing themselves by falling into flames; [...]</i>	Weakness, paralysis		
<i>Two women who were crippled, one in one hand, the other in both, [...]</i>	Deformities		
<i>[...] her arms were just as thin as a board; [...]</i>	Atrophy	Dystonias	675-678
<i>[...] she could not grasp a thing or hold it with her hands, [...]</i>	Weakness, paralysis		
<i>[...] demoniac [...]</i>	Demonic possession		
<i>[...] she was made mute [...]</i>	Aphasia?		
<i>And her faculties were greatly diminished</i> <i>She was often seized by the poisonous beast, [...]</i>	Impaired, judgement/reasoning Recurrence		
<i>[...] went wandering in circles. [...] wandering astray like a lunatic, [...]</i> <i>[...] a rather large figure placed himself before her; [...]</i>	Wandered in circles like a mad person Vision/hallucination	Complex partial seizures with secondary generalisation	679-699
<i>While she was at Mass the devil seized her; [...]</i> <i>[...] he hurled her to the ground and dragged her painfully around; [...]</i> <i>[...] twisting her mouth which was spewing foam, [...]</i> <i>[...] while making ugly faces and speaking vile language.</i>	Generalised tonic-clonic seizure		

**Table 2.** Summary of the “neurological miracles” of Saint Aemilianus, according to *The life of Saint Aemilianus of La Cogolla* (1230-1236), by Gonzalo de Berceo.

Semiology	Interpretation	Possible diagnosis	Location in the text (stanza)
<i>[...] a paralytic [...]</i> <i>She [...] had no control [...]</i> <i>[...] could not walk.</i>	Paralytic Unable to leave bed Unable to walk	Paralysis? Paraplegia?	132-136
<i>[...] crippled [...]</i> <i>[...] she did not control her feet.</i> <i>Since her childhood, [...]</i>	Deformities Leg paralysis Since childhood	Cerebral palsy?	138-153
<i>She lost her vision, [...]</i> <i>[...] possessed by the devil: [...]</i> <i>The devil made him say crazy things: [...]</i> <i>[...] besides the words, he did other dirty things.</i> <i>[...] whence the sick one made many faces.</i> <i>[...] powerfully oppressed by the devil.</i>	Blindness Demonic possession Insane speech He also performed obscene acts. Abnormal postures/movements Demonic possession	Blindness Tourette syndrome ?	154-156 157-160 162-168
<i>[...] another man possessed, [...]</i> <i>A lady, Proseria, was possessed.</i> <i>Nepociano. He had a twofold demon [...]</i> <i>He understood how the demons were double [...]</i> <i>They assaulted both of them daily [...]</i> <i>Another possessed woman [...]</i>	On a daily basis		169-170 171-176 177-180
<i>Crazy, forgetful old man, [...]</i> <i>[...] you have returned to the understanding of a child.</i>	Old age + memory loss + insanity Return to childhood	Dementia?	284
<i>[...] two very unfortunate blind men.</i> <i>Their sight returned to them at once.</i> <i>[...] they were suddenly afraid.</i> <i>[...] stunned [...]</i> <i>[...] and could not regain consciousness at all.</i>	Blind men with severe disease They immediately recovered their sight. Agitation Confusion Unable to reason	Blindness Confusional syndrome Delirium?	323-330
<i>[...] an unfortunate woman [...] a twofold sickness [...]</i> <i>Her feet were numb, [...]</i> <i>[...] her vision clouded; [...]</i>	Dual diseases Numb/paralysed feet Loss of visual acuity	Deficiency syndrome? Strachan syndrome?	340-341

**Table 3.** Summary of neurological references in *The miracles of Our Lady* (MOL; 1246-1252), *The martyrdom of Saint Lawrence* (MSL; ca. 1264), *The lamentation of the Virgin* (LV), and *The praises of Our Lady* (POL), by Gonzalo de Berceo.

Semiología	Interpretación	Possible diagnosis	Location in the text (work, stanza)
[...] crackbrained [...]	Recklessness, debauchery, poor judgement	Not a disease	MOL, 101
Five bodily senses that make us sin, [...]	Five senses		
[...] sight, hearing, smell, taste, [...]	Sight, hearing, smell, taste	Not a disease	MOL, 121
[...] and that of the hands which we call touch.	Touch		
This cleric fell gravely ill; [...]	Sudden onset, severe disease		
[...] his eyes were about to pop out of his head; [...]	Eyes bursting from orbits	?	MOL, 123
[...] e considered his journey to be complete, [...]	Sensation of death	Subarachnoid haemorrhage?	
He had very little sense; he committed much foolishness; [...]	Figurative use	Not a disease	MOL, 161
[...] or have you been touched with St. Martin's staff.	Touched by the staff of Saint Martin (the patron saint of innkeepers and drunks)	Alcohol poisoning (figurative use)	MOL, 340
[...] he made evil faces like someone demon-possessed.	Agitation	Not a disease	MOL, 361
God sent upon them an infernal fire; [...]	Infernal fire		
[...] it did not flame, yet it burned like St. Martial's fire.	Ignis sacer (holy fire)		
It burned their limbs in a deadly way, [...]	Saint Martial's fire		
[...] they lost feet and hands and wound up deformed, [...]	Gangrene, spontaneous amputation		
[...] their legs and arms drawn up to their chests.	Contractures Dystonic posture	Saint Anthony's fire Ergotism	MOL, 385-386
The fires died down; they felt no more pain, [...]	Partial recovery		
[...] but never again were they fully masters of their limbs; [...]	Sequelae		
The crazy man got drunk; he took leave of his senses; [...]	He got drunk		
He made bad faces at him, the devilish thing; [...]	Hallucinations	Alcohol poisoning	MOL, 463 et seq.
They lost their memory [...] lost all their wits.	Confusional syndrome		
They went from the door; they could not find it.	Disorientation		
[...] went wandering in circles.	Disorientation		
The mad, star-crossed ones [...] were going around like drunkards [...]	Ataxia	Confusional syndrome Delirium	MOL, 720-723
Now they fell on their faces, now on their sides, [...]	Falls		
[...] gave to the blind sight and health.			MSL, 47-49
She suffered daily from so many headaches [...]	Daily headaches		
[...] hat she was always more ill than she was well; [...]	Chronicity	Chronic daily headache	MSL, 51-53
[...] had lost his sight; [...]		Blindness	MSL, 59
[...] whose eyes were blind; [...]			MSL, 80
[...] my blood ran cold and I lay in a faint; [...]			
When I came to my senses, I looked all around: [...]	Fainting	Syncope	LV, 17-18
[...] fell dead on the ground as if violently ill, [...]	Sudden fainting		
[...] splashed her with cold water, but she did not come to.	Her face was splashed with cold water but she did not awaken	Syncope	LV, 109, 111-112
They splashed cold water on her eyes and face, [...]			
[...] they lost their consciousness and all their wits: [...]	Confusion	?	
[...] they all tumbled dead upon the bare ground, [...]	Loss of consciousness	Collective confusional syndrome (!!!)	LV, 193-195
[...] unable to see from their eyes all injured; [...]			
Zechariah [...] when he recovered his speech; [...]	Recovered the ability to speak	Muteness, aphonia, aphasia	POL, 18

of Neurology, in 2008). However, I did not consider the possibility that the joint possession of the married couple Proseria and Nepociano (*LSA*, st. 111-176) might be a case of shared psychotic disorder (“folie à deux”). Espí Forcén and Espí Forcén do not discuss the slave of Tüencio, who was possessed by five demons simultaneously (*LSA*, st. 161-178). They also do not address in detail the cases of Eugenio’s slave (*LSA*, st. 169-170) or of Colomba, the daughter of Máximo (*LSA*, st. 177-180).

I disagree with the proposed diagnosis of Diogenes syndrome secondary to schizophrenia or severe depression in the senator Onorio (*LSA*, st. 181-198). In my opinion, the available data do not support this hypothesis. I also dispute these authors’ diagnosis of García Muñoz of Gomiél (*LSDS*, st. 398-417), which they attribute to delirium.<sup>36</sup> The text includes sufficient data in support of a diagnosis of epilepsy, a possibility considered by Berceo himself when he refers to a *gota mortal* that “affected his mind,” a clear reference to *gota coral*, a medieval term for epilepsy.

However, the authors do consider a diagnosis of epilepsy in the case of Orfresa (*LSDS*, st. 613-616), based on a single detail: her twisted body (in fact, Berceo’s text describes it as *quebrantado* or “shattered”). They more thoroughly assess the case of Diego of Celleruelo (*LSDS*, st. 626-635), whom they diagnose with catatonia, also suggesting the possibility of complex partial seizures. I should like to expand the differential diagnosis to consider the possibility of a psychotic disorder, or even another case of Tourette syndrome.

Espí Forcén and Espí Forcén<sup>36</sup> do not assess the cases of the possessed women Oveña, María, or Eulalia (*LSDS*, st. 637-643), whom I consider to present epilepsy. The final case of demonic possession, healed in a posthumous miracle of Saint Dominic, was in a woman from Peña Alba; the authors attribute this to hysteria, a possibility that must always be considered in the differential diagnosis of cases of demonic possession. However, this patient also shows clear signs of epilepsy, and diagnosis of conversion disorder cannot be ruled out.

In 2015 and 2017, Gondim et al.<sup>38,39</sup> published two studies on medical and neuropsychiatric aspects of *The miracles of Our Lady*, as well as a similar analysis of the *Cantigas de santa María*, published two years earlier.<sup>40</sup>

According to these authors, 19 (76%) of the 25 miracles recounted in Berceo’s works include details of medical

relevance. I disagree with this analysis. I would dispute the following cases: intense, sudden onset headache (Miracle 4; diagnosed as hypothyroidism or Hippocratic facies by Gondim and colleagues); herb poisoning (“you seem poisoned, as if you have drunk herbs”) or alcohol poisoning (“touched with St. Martin’s staff” [Saint Martin is the patron saint of innkeepers and drunks]), diagnosed by Gondim and colleagues as encephalopathy (psychiatric or organic) and demonic possession; Miracle 17, interpreted as demonic possession or a crepuscular state/psychosis, which in my opinion corresponds to agitation (the diagnosis suggested in Berceo’s original text is internal fire or St. Martial’s fire [ergotism]); Miracle 21 clearly appears to be alcohol poisoning with hallucinations; and Miracle 24 is interpreted as an encephalopathy (either psychogenic or nutritional), whereas in my opinion it corresponds to a case of confusional syndrome, disorientation, and ataxia.

Berceo only offers diagnoses for three of the diseases described in the text. In Miracle 17 in *The miracles of Our Lady*, Berceo nominally informs us about the disease with which the profaners were punished (more for their profanation than for murder). The disease was known as “ignis sacer” (holy fire) or St. Martial’s fire, an eponym by which it was initially known in Central Europe, until it later came to be known as “Saint Anthony’s fire” from the late 11th century, and ergotism from the late 16th century, after its cause was established.<sup>41,42</sup>

The identification of the other disease is incomplete, but from the rest of the text we can infer, with complete certainty, the disease in question. Regarding the miracle performed by Saint Dominic on García Muñoz, Berceo notes that the latter was “at times” (suggesting recurrence) seized by a *gota mortal* (with *mortal* referring to the severity of the disease) and that “that seizure usually [recurrence, once again] affected his mind [in the original Spanish, *tomar el corazón* or ‘took his heart’].” Thus, Berceo specifies that the fit (referring to disease in general) affected the heart, completing the profile of *gota coral* (“heart malady,” the term used at the time for epilepsy).

I would dispute the second definition of the term *gota* in the Royal Spanish Academy’s *Diccionario histórico de la lengua española*,<sup>43</sup> which equates the term with epilepsy. In my opinion, the term refers to disease in general, with modifiers used to define and specify the particular disease in question: in this case, the modifiers would be the terms *caduca* and *coral*. *Gota caduca* and *gota*

*coral* refer to epilepsy, in the same way that *gota artrítica* and *gota serena* refer to gouty arthritis and blindness, respectively.<sup>44</sup>

The *Diccionario de autoridades*<sup>45</sup> is more specific. In Vol. III (1732), it defines epilepsy as “a disease colloquially known as *gota coral*, as it is a disease [*gota*] that affects the heart”; Vol. IV (1734) equates *gota coral* with epilepsy.

The third of the direct references to diseases is to leprosy. The limited emphasis on leprosy in Berceo’s work (*LSDS*, st. 475-478) stands in contrast to its high “prevalence” (which some authors estimate at 4% of the population) in documentation from the time. The diagnosis of the patient healed by Saint Dominic presents some uncertainties. The term *afollado* (disfigured) is suggestive of other skin diseases, such as psoriasis, although the text contains three direct references to leprosy: *gafó*, *malato*, and *lepra*.

The remaining references to disease are very rich and varied, sometimes providing sufficient semiological details for us to speculate about potential diagnoses and sometimes providing limited information. In many cases the information provided is limited by the poem’s rhyme scheme.

In medieval texts, as in the books of the Bible, disease and symptoms of disease are often used metaphorically in association with sin.

References to the senses are scarce, as noted above. The most frequently mentioned is sight.<sup>46</sup> Blindness is one of the most prevalent diseases in medieval documents. Hearing and vision loss are often used metaphorically (*POL*, st. 15; *H-II*, st. 3; *LSA*, st. 154-156, 316). Smell and sight-smell synaesthesia appear in the descriptions of the visions of Saint Oria.<sup>47</sup>

A particularly interesting case is the description of the first posthumous miracle of Saint Aemilianus, in which blind people recovered their sight. Berceo expands on the content of the *Vita* of Saint Braulio, composing a story narrating the confusional syndrome caused after sight was suddenly restored: fright, agitation (“suddenly afraid”), disorientation, confusion (“stunned”), and alterations of judgement and reasoning (“*non podieron entrar en acuerdo para nada*”; “and could not regain consciousness at all”). Berceo even specifies the duration of the symptoms, “the whole day” (*LSA*, st. 323-330).

References to headache are much less frequent than we may expect, with only two mentions. A cleric (*MOL*, st.



Figure 7. Ivories from the reliquary ark of Saint Aemilianus. Miracle: struggle between the saint and the demon; exorcism of the possessed deacon (Tourette syndrome?); two healings. Photograph by the author.

123) who prayed every day to the Virgin Mary became ill with headache, which we infer was of such severe intensity that it seemed the eyes would “pop out” of their orbits (more in a metaphorical than a literal sense), to the point that he believed he would die (“he considered his journey to be complete”). The cleric was cured by the Virgin, whose pulse showed that the disease had ended; however, the rest of the text seems to suggest spiritual salvation rather than physical healing. The clinical picture, with acute onset, intense pain, a sensation of imminent death, and ocular involvement, may be interpreted in many ways, from intense pulsatile headache to bilateral glaucoma or Graves-Basedow disease. From a neurological perspective, we might suspect subarachnoid haemorrhage or other aetiologies within the syndromic diagnosis of thunderclap headache. We can be more certain about another reference, a woman who “suffered daily from so many headaches” (*MSL*, st. 52-53), which we can consider to be synonymous with chronic daily headache.

A term that was not included in the semiological analysis was madness or *folia*, the opposite of sense and sanity. Berceo uses these words very frequently, non-specifically, and often metaphorically.<sup>48</sup>

On two occasions, he makes a semiological association between memory and strength. One case, featuring loss of strength but intact memory, taking into account the context, seems to correspond to physiological ageing, natural death of old age (*LSDS*, st. 491). The other case is harder to interpret, presenting loss of both functions as a divine punishment (*LSDS*, st. 426).

When Saint Aemilianus prophesied the destruction of Cantabria, one of the citizens, Abundancio, insulted him in terms recalling the description of cognitive impairment: “Crazy, forgetful old man, you have returned to the understanding of a child” (*LSA*, st. 284). Despite the resemblance of this description to a clinical picture of dementia, I believe this to be a metaphor.

Delirium or confusional syndrome are also present. One example is Miracle 24 (*MOL*, st. 720-722). In addition to confusional syndrome, the protagonists, punished by the Virgin Mary, also presented ataxia: instability, falling on their faces and their sides (*MOL*, st. 723), which Berceo compared to drunkenness (“going around like drunkards all dazed”).

At least two episodes of syncope are recorded, both cases in the Virgin Mary, related to the martyrdom and death of her son (*LV*, st. 17-18 and 109-112). This is one of the moments portrayed in the majority of depictions of the crucifixion of Christ.

One of the most frequently depicted disorders features motor deficits as the most prominent symptom. The diagnosis of “paralysis” is as frequent as it is imprecise. Although this description sometimes includes other signs (often observed in “cripples”), the information provided is scarce and it is not possible to make a precise diagnosis. Paralysis typically affects the lower limbs, with the associated functional impact, the most significant at the time: the inability to walk (*LSA*, st. 132-136 and 138-146). Paralysis frequently also affects the arms, as in the case of María of Fuenteoria (*LSDS*, st. 581-589). These cases always present long progression times, often with onset in childhood (*LSA*, st. 138).

A great variety of potential diagnoses are possible, ranging from infectious (polio, post-encephalitic, etc) or deficiency disorders to cerebral palsy, lathyrism, etc.

A case of disabling pain in the hand (*LSDS*, st. 443) is suggestive of carpal tunnel syndrome, despite the lack of accompanying symptoms.

As noted above, many cases frequently present associations of different symptoms, with one being predominant. This is the case with *contrechura* (“deformity”) and paralysis. Deformity as the prominent “diagnosis” is recorded in five cases, four of which are addressed in little detail: Ananías, Fruela, Muño, and María. Ananías (*LSDS*, st. 549-556) presented a disease of four months’ progression, and was unable to leave bed, with his arms doubled up, stiff, and braced against his chest; he also presented dysphagia. Berceo uses a term, *gota*, which we may only interpret as disease in the absence of specific details through the use of modifiers (*coral*, *artrítica*, etc). Fruela and Muño appear to present greater lower-limb and axial involvement, preventing them from moving. The other two cases, both women (*LSDS*, st. 675-677) presented focal deformities, with the involvement of one and both hands, respectively. In the second, Berceo once more suggests that the cause was performing activities during Saturday vespers.

Both Covarrubias<sup>49</sup> and the *Diccionario de la lengua española* of the Royal Spanish Academy<sup>50</sup> define *contrecho* as disabled, crippled, lame, deformed, etc. The term is derived from the Latin *contractus*, the past participle of *contrahere*, and its literal meaning is contracted or shrunken. The term can be interpreted in many ways, from contractures of non-neurological origin to poliomyelitis, cerebral palsy, generalised dystonia, etc.

The most frequent clinical picture, in Berceo in particular and medieval literature in general, is demonic possession. The presence and participation of the devil in people’s lives has been addressed in numerous studies from a great variety of perspectives, as noted above.<sup>51-59</sup>

In 1603, Jean Taxil (1570-1640?)<sup>60</sup> forcefully asserted that “there is no demoniac who is not an epileptic.” We may fully accept this statement, replacing the work “epileptic” with “neuropsychiatric disease.”

Berceo describes numerous cases of demonic possession and exorcisms: the slave of Tüencio, named Sibila according to Saint Braulio, who was possessed by five different demons (*LSA*, st. 161-165); the slave of Eugenio, who according to Saint Braulio was invaded daily by the devil (*LSA*, st. 169); Proseria and her husband Nepociano (*LSA*, st. 171-173), each of whom was possessed by two



Figure 8. Reliquary ark of Saint Aemilianus; ivories showing scenes of the life and miracles of the saint. Eleventh century. Photograph by the author.

demons (or just one demon each, according to Saint Braulio) on a daily basis; Colomba (*LSA*, st. 177); and many other anonymous victims. All were healed by Saint Aemilianus. He also describes Orfresa (*LSDS*, st. 612), Oveña, María, Eulalia, and others, healed by Saint Dominic (*LSDS*, st. 637).

Demonic possession did not exclusively affect humans, with cases also described in animals and even houses, as was the case of Onorio, the senator from Parpalinas, whose home had to be exorcised by Saint Aemilianus. This is depicted graphically in one of the ivories of the saint's reliquary ark (*LSA*, st. 181-182).

Often due to the demands of the rhyme scheme, Berceo presents an incomplete account of epileptic signs: one individual presented recurrence of seizures ("he was often possessed"), sometimes cried out, and was considered insane; others presented falls ("they often fell to the ground"), even falling into fires.

From a semiological viewpoint, the richest description is that of the healing of the demoniac from Peña Alba

(*LSDS*, st. 679-699). Affected by a severe disease, she presented language and memory impairment, with frequent episodes, "wandered astray like a crazy woman," and could not be cured; she also presented visual hallucinations that may correspond to an aura. The details included in stanza 690 are particularly relevant: "hurled [...] to the ground [...] twisting her mouth which was spewing foam, while making ugly faces and speaking vile language." The latter two details suggest a possible diagnosis of Tourette syndrome, although the remaining signs are not consistent with this.

More specific details are included in the case of a cleric "possessed by the devil" (*LSA*, st. 157-160). An ordained deacon, possessed by the devil, "was humiliated by his companions" because the devil compelled him to "say crazy things" and do "other dirty things": the disease had many manifestations, in which the deacon "made many faces." The clinical picture leaves no room for doubt about the syndromic diagnosis.<sup>36,37</sup> With almost complete certainty, this is the earliest reference to the syndrome described in 1885 by J.M. Charcot's disciple



Georges Gilles de la Tourette (1859-1904), known today by his eponym, Tourette syndrome.<sup>61</sup> Although the age of the patient (older than 23 years, given his position as deacon) may cast doubt on this diagnosis, the literature does include (rare) cases with onset after 18 years of age.

The description of Saint Dominic's miracle performed on María of Castro Cisneros (*LSDS*, st. 290-305) includes semiological details that suggest a possible diagnosis of tetanus: acute onset, predominant rigidity, contracture of the fingers (carpedal spasms?), slurred speech, "twisted" mouth, etc.

From a neurological perspective, it is impossible not to speculate about signs related to cerebrovascular disease, such as those observed in the miracle performed by Saint Dominic on the woman from Palencia (*LSDS*, st. 557-560). As noted above, the auditory impairment, and especially hearing loss, are rarely mentioned in the work of Berceo. The association between loss of hearing and loss of speech suggests a diagnosis of mixed aphasia. The remaining stanzas, up to her healing by Saint Dominic, indicate that language was not the only domain affected: the woman had to be transported and placed beside the tomb of Saint Dominic to wait for the miracle to occur.

In this case, Berceo employs one of the most widely used aetiological explanations in the Middle Ages (and even today, in some cultures): failure to observe the Sabbath or attend vespers, instead performing her daily activities, such as kneading and baking bread.

A less probable diagnosis is the overused suggestion of "aphasia of Zechariah" applied to the case recounted in *The praises of Our Lady* (st. 18), which seems to bear a greater resemblance to muteness or aphonia. It is common knowledge that the angel punished Zechariah for his incredulity about Elizabeth's pregnancy, given her advanced age, by removing his ability to speak (which he later recovered). However, Zechariah presented no other deficits, and was able to express in writing the name he wished to give his son. While *cobrar la lengua* ("recover his speech") is an elegant way of describing his recovery, establishing a diagnosis of aphasia is presumptuous; this is also the case with so many other diagnoses that have been issued and repeated ad nauseam in texts presented as studies of the history of medicine.

The symptoms described in the woman from Enebrada (Nebreda, Burgos) (*LSDS*, st. 606-608) seem to bear a closer resemblance to stroke; in addition to the

"withered" hand, she presents language involvement (*lengua embargada* = muteness): she was unable to pick anything up or to speak. The immediate suspicion is a stroke involving the left middle cerebral artery.

References to the "withered hand" are abundant both in the Old Testament (Psalms 137:5-7: "If I forget thee, O Jerusalem, let my right hand forget her cunning. If I do not remember thee, let my tongue cleave to the roof of my mouth [...]") and in gospel descriptions of the miracle of Jesus Christ (Matthew 12:9-14; Mark 3:1-6; Luke 6:6-11), as well as in images depicting this miracle. There have been a wide range of interpretations, from radial compressive paralysis ("Saturday night palsy") to radial Saturnine palsy or stroke.<sup>62-64</sup>

With respect to this diagnosis, we should also mention Ximena de Tordómar (*LSDS*, st. 617-621), although the use of the term *agena* ("alien") in reference to the hand brings to the neurologist's mind another syndrome.<sup>65</sup> In fact, these symptoms overlap with the "withered hand." The author even makes a direct allusion to this: the withered hand is likened to straw (thin and brittle) and winter (cold), compared to the healthy hand.

One of the most relevant aetiologies in diseases at the time, as well as functional causes, is nutritional deficiencies and toxic substances. The first of the miracles collected in the third book of *The life of Saint Dominic of Silos* recounts the disease of a child, Pedro (*LSDS*, st. 538-548), affected by a severe, prolonged disease for which the physicians were unable to do anything. He presented dysphagia, "weakened" limbs (atrophy?), "sunken" eyes, and hands and feet "out of joint" (luxation?), and was blind. After being healed, he still needed a period of recovery. A similar case is that of Sancho (*LSDS*, st. 597-601), who in addition to a longstanding disease that left him "crippled" and unable to walk, was also completely blind.

In my personal opinion, these cases are suggestive of a deficiency disease resembling Strachan syndrome. Other possibilities, which are more common today, include demyelinating disease (neuromyelitis optica spectrum disorders) or paraneoplastic syndromes; however, a nutritional deficiency seems more likely given the conditions of the day. In the case of Sancho, the possibility of a toxic aetiology (often associated with deficiency diseases) is also tempting, particularly due to frequent misunderstandings of stanza 598 (*Porque querie qel vino* [...]), which must be interpreted as meaning "whatever

the reason,” rather than anything to do with wine (vino). A very similar case is one of the individuals healed by Saint Aemilianus (*LSA*, st. 340-341): the woman with a “twofold sickness” involving both her vision and her feet.

The demon appears before Oria (Aurea) (*LSDS*, st. 328) in the form of a serpent, seeking to frighten her, and changes in size (both height and thickness). These symptoms resemble Alice in Wonderland syndrome, although they may also be explained by hallucinations. This Oria is not Saint Oria of the monastery of San Millán de la Cogolla, although she was also an anchoress, but at the monastery in Silos.

Aurea of Villavelayo lived for 18 years as an anchoress in a cell at the monastery, submitting herself to harsh penance and mortification. During the last year of her life she suffered (or rather, enjoyed) three visions or ecstatic episodes. These visions, the first accounts of the mystical in literature, resemble the episodes observed in ecstatic epilepsy. Such other features as olfactory perceptual alterations and out-of-body experiences (“you must return to your body”) support this diagnostic hypothesis.

### Conclusion

Berceo’s extensive oeuvre, due to both its status as hagiographic literature (particularly the thaumaturgic references and descriptions) and its faithful, colloquial portrayal of everyday life at the time, represents an essential source for studying disease in the Middle Ages.

### Conflicts of interest

The author has no conflicts of interest to declare.

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