Art in Science: Jusepe de Ribera’s Puzzle in The Clubfoot

Kadir Abul MD, Abdulhamit Misir MD, Abdul Fettah Buyuk MD

From the Column Editors,

Through a careful inventory of the objective anatomical features portrayed by Jusepe de Ribera in his 1642 painting entitled The Clubfoot, Abdulhamit Misir MD and his team propose this young beggar may have had poliomyelitis. Whether this new interpretation of the image is correct remains lost to the centuries, but the process of re-examining the many potential clues to diagnosis embedded in this painting is commendable.

A note from the Editor-in-Chief: I am pleased to present the next installment of “Art in Science.” In this month’s guest column, Abdulhamit Misir MD and his team examine The Clubfoot by Spanish painter Jusepe de Ribera, and offer their diagnosis of a young child beggar depicted in Ribera’s famed painting.

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A. Misir MD (✉), Sanliurfa Training and Research Hospital, Yenice Mahallesi, Yenice yol No:1, 63200, Eyyübiye / Sanliurfa, Email: misirabdulhamitmd@gmail.com
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Kudos also to the artist, who presumably recorded the findings depicted herein with accuracy, even in the absence of fully understanding the significance of these observations. Honesty, objectivity, and rigor are at the heart of exceptional physical diagnosis. If the authors have arrived at the correct diagnosis, based upon their contemporary interpretation of a nearly 400-year-old painting, then we have an exciting addition to the history of a disease (poliomyelitis in this instance) that can now be traced well before it was described in the medical literature.
— Gary E. Friedlaender MD, Linda K. Friedlaender BA, MS

Although renowned engraver, printmaker, and painter Jusepe de Ribera (1591-1652) is of Spanish descent, he spent most of his life in Italy where his artistic influences included Italian Baroque painters Michelangelo Merisi Caravaggio and Antonio da Correggio [1]. Described as the “link between Caravaggio and the young (Diego) Velázquez” [12], Ribera’s tenet of dark and mysterious shadow-dominant works often depicted painful events (Fig. 1) or the hopelessness of humanity. His paintings, steeped in realism, generally centered around peculiar subjects with aggrieved faces or distorted bodies [1]. One art critic described Ribera this way: “He picked up Caravaggio’s high-contrast lighting and low-life milieu” [5].

By the 1630s, however, Ribera’s style dramatically shifted in style, color, and tone [6]. Having settled with his wife in Naples, Ribera was likely influenced by the city’s diverse range of Neapolitan naturalistic artwork. The full-length, oil-on-canvas painting entitled The Clubfoot (Fig. 2), featuring a child beggar, is a good example of this shift. Painted in 1642, we can see that The Clubfoot moves away from Caravaggio’s dark and foreboding style (Fig. 3) to the bright and vibrant feel more in the mold of Annibale Carracci, a renowned Baroque painter from Bologna, Italy known for his deep earthy tones (Fig. 4) [3].

In The Clubfoot, we see a smiling boy, seemingly pleased to be having his portrait painted by the artist. The boy’s dark brown clothes are prominently presented against the clear blue daylight, another sign of Ribera’s departure from his previously ominous style. Our viewpoint of the child gives the boy great size; it’s an empowering pose and one that depicts confidence and dignity [5]. This is not a deformed body, hidden under the cloak of darkness—the boy is on full display. He is holding a stick over his left shoulder and a paper in his left hand. Written in Latin, the text reads: “Da mihi elimo / sinam propter / amorem dei” ("Give me alms, for the love of God"). Some consider this a sign that the boy is mute, but in fact,
the paper is a permit allowing pan-handlers to beg in Naples [11]. By the 17th century, the population in Naples had ballooned to 300,000, and was considered one of the largest cities in Europe [7]. This population expansion resulted in added consumption of traditional Neapolitan exports like wheat, wine, and oil. With less to export, and a run of bad harvests to overcome, the city relied on buying more imports, subsequently increasing its debt. Manufacturing in the city declined during this time as well, producing a vast number of impoverished citizens [7]. Ribera, having established himself as an influential painter in Naples, was not one of these unfortunate citizens; his patrons included Spanish Viceroy’s, who would request commissions for paintings and collections [6].

By the mid-17th century, Ribera’s standing in Neapolitan society had improved and his style had evolved, but his fascination with ailing subjects remained consistent throughout his artistic life [1]. Knowledge of anatomy is a basic but indispensable tool for artists, and because of Ribera’s impeccable mastery of realism, we can see that the child beggar has a host of musculoskeletal disorders, adding another layer of intrigue to the boy’s story. While orthopaedic surgeons will recognize the child’s equinus and varus foot deformities for which the painting is somewhat dehumanizingly named, one also notes apparent atrophy in the right leg relative to the left leg, a noticeable leg-length discrepancy, pes planus in the left foot, and perhaps even increased lumbar lordosis. We also observe that he postures his wrists in flexion and his elbows in extension (Fig. 5).

What is the diagnosis? Can we offer one based on Ribera’s “clues”?

We are not the first to attempt to diagnose Ribera’s child beggar; others...
have proposed arthrogryposis, dwarfism (The Clubfoot was known as The Dwarf before the Louvre included it in its collection in 1870), hemiplegia, and cerebral palsy [2, 8, 11, 13]. And interestingly, there is some contention whether the boy even has a clubfoot, as the title of the painting would suggest [2]. After examining the clues, we propose a different possibility: Poliomyelitis. Indeed, we contend that Ribera’s The Clubfoot may have serendipitously depicted a medical condition in 1642 that would not be described by the medical community for another 100 plus years.

We believe the flawlessly depicted details in the painting support this contention. Examine the length of the stick the child is holding, which matches the level of his underarm, allowing its use as a kind of crutch (Fig. 6). The part of the stick around the child’s neck is eroded and curved at this level (Fig. 7). We believe the child would use it to “lock the knee” by applying pressure right above the knee level and toward the back to facilitate a back-knee or recurvatum gait, as patients with profound quadriceps weakness must do in order to avoid buckling of the knee during stance phase.

Poliomyelitis (sometimes called Heine-Medin disease) is caused by a neurotrophic virus that enters the body through the gastrointestinal and respiratory systems and travels hematogenously to the central nervous system causing acute infection. The poliovirus has a predisposition to certain cells of the anterior horn of the spinal cord and brainstem. When infected with the poliovirus, these cells die, resulting in the loss of stimulation of the motor cells they feed [4].

Patients with poliomyelitis may develop leg-length discrepancies, Achilles tendon contractures and equinus foot deformities, back-knee (or recurvatum) gait, and fatigue caused by excessive energy consumption. To assist in maintaining a stable back-knee (or recurvatum) gait, in order to minimize the risk of falling, many patients use special external tools such as a crutch to lock the knee in extension during stance phase of gait. Some prefer using a crutch on the affected side just above the knee as a simpler solution, as the child beggar in the painting does to draw attention to his disability.

Although the condition we now know as poliomyelitis was first described in 1789 and characterized in the mid-19th century, the virus was not identified until the 1930s. The first documented polio epidemic occurred in Vermont in 1894, and it became one of the most-dreaded childhood diseases of the 20th century [10]. Epidemics continued until American medical researcher Jonas Salk developed one of the first successful polio vaccines.

The Clubfoot represents the symbiotic relationship between art, medicine, and observation. Indeed, observation is an essential component of a patient examination and clinical diagnosis, and by carefully and objectively taking an inventory of our findings from the visually-complex painting, we can put together the clues to arrive at the most likely diagnosis. Although a specific diagnosis of the child beggar in The Clubfoot may never be made with certainty, we believe poliomyelitis is the most likely candidate based on the fine details provided by Jusepe de Ribera.

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