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Leonardo da Vinci's Virgin of the Rocks: Perhaps the first depiction of congenital vascular malformation syndrome

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Key words

History of medicine, Klippel–Trénaunay–Weber syndrome, Madonna of the Rocks, Parkes Weber syndrome.

Sir:

Leonardo da Vinci is considered amongst the greatest geniuses and innovators of all time. His work as an artist during the renaissance has demonstrated his ability to depict anatomy and pathology with a degree of accuracy that was unparalleled (Ashrafian 2011a, 2013). Amongst his works, Leonardo painted the piece known as the *Virgin of the Rocks* (also known as the *Madonna of the Rocks*) twice; the first version is dated to approximately 1491/2-9 (now based at the Louvre, Paris) and the second is dated to approximately 1506-8 (now based at The National Gallery, London).

Both depict two infant figures; one is sitting and represents the Christ Child (www.louvre.fr/en/oeuvre-notices/virgin-rocks; www.nationalgallery.org.uk/paintings/leonardo-da-vinci-the-virgin-of-the-rocks) and one is kneeling to portray John the Baptist. Studying the image of the Christ Child reveals that the infant depicted has heavily hypertrophied lower limbs or bilateral leg gigantism. This is present to a lesser degree in the figure of John the Baptist. Whilst the whole image has characteristic colours to represent shadowing, the painted colours on the Christ Child show pigmentation anomalies of the lower limbs. Although these depictions may be purely artistic, they may alternatively be based on models or observation of clinical pathology.

The presence of characteristic bilateral gigantism or hypertrophied lower limbs in the presence of pigment abnormalities could represent the first ever depiction of Klippel–Trénaunay–Weber syndrome characterised by soft tissue hypertrophy and lympho-venous malformations possibly depicted in the image of the Christ Child's legs, where the differential pigmentation may represent the characteristic port-wine staining (or nevus flammeus) of this condition. Alternatively these features might represent Parkes Weber syndrome with additional arteriovenous malformations that may contribute to lower limb gigantism and skin pigment changes. Other differentials include neurofibromatosis (Ashrafian 2011b), Proteus syndrome and primary intestinal lymphangiectasia (Waldmann's disease).

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It is interesting to note that if Leonardo had accurately depicted a congenital vascular malformation syndrome, this would have preceded the descriptions of Klippel–Trénaunay–Weber and Parkes Weber syndromes by approximately 400 years; highlighting the existence, morbidity and mortality of these conditions in the renaissance era. They may have also contributed to the message of the artwork, as both painted characters were considered to have experienced 'suffering' throughout life so that their depiction by innocent yet disease-affected infants may have represented the suffering of these characters.

References

Ashrafian H. (2011a) Leonardo da Vinci's Vitruvian Man: a renaissance for inguinal hernias. Hernia 15: 593-594.

Ashrafian H. (2011b) Limb gigantism, neurofibromatosis and royal heredity in the Ancient World 2500 years ago: Achaemenids and Parthians. J. Plast. Reconstr. Aesthet. Surg. 64: 557.

Ashrafian H. (2013) Leonardo da Vinci and a cystohepatic triangle anomaly 383 years before Calot. Dig. Liver Dis. 45: 867-868.