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Research Article

Was Mona Lisa affected by an Ehlers-Danlos Syndrome?

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ABSTRACT

Mona Lisa Maria Gherardini was the Florentine Francisco del Giocondo's wife. Her face's enigmatic expression made Leonardo da Vinci's work the most famous painting of the World. Recently, the advanced assumption of severe hypothyroidism, was ruled out. Michael Yafi, an art lover and a pediatric endocrinologist reacted vigorously and claimed that Ma Dona Lisa (Mona Lisa) was euthyroid. A series of manifestations of Ehlers-Danlos' disease make it possible to explain the similarity of the faces of the patients concerned with that of the Mona Lisa: the texture of the skin, the "immobile" aspect of the face, a proprioceptive disorder that is also expressed in the face, a particular gaze because of binocular vision coordination difficulties and head and eyes movements harmonization. In Ehlers-Danlos, hypothyroidism is frequent in the context of diffuse involvement of connective tissues, therefore endocrine glands.

Keywords: Mona Lisa; Ehlers Danlos; Hypothyroidism; Smile; Diplopy; Laxity skin; Proprioception

INTRODUCTION

Mona Lisa Maria Gherardini was the Florentine Francisco del Giocondo's wife. Her face's enigmatic expression made Leonardo da Vinci's work the most famous painting of the World. Several medical hypotheses, related to medical pathologies which were most in vogue at the time were put forth, trying to explain the enigmatic aspect of her face: asthma, bruxism, Charles Bell's facial palsy, hypercholesterolemia, syphilis, depressive state [1-4]. More recently, autoimmune diseases, Helicobacter infections and diet have been mentioned. Lately the presence of severe postpartum hypothyroidism associated with psychomotor retardation [5] has been mentioned, involving the role of a diet poor in iodine and associated with pregnancy.

Recently, the advanced assumption [6] of severe hypothyroidism, was ruled out. Michael Yafi, an art lover and a pediatric endocrinologist reacted vigorously and claimed that Ma Dona Lisa (Mona Lisa) was euthyroid. Michael Yafi [7], director of the division of pediatric endocrinology at the McGovern School of Medicine at the University of Texas (McGovern Medical School, University of Texas) disagrees. He questions the observation that the woman had goiter. If so, he says, the affection, which was represented in the art of ancient civilizations, would then have been more pronounced and clearly delineated in the painting. Many of Leonardo da Vinci's paintings represent women without eyebrows, he added. According to him, a long-term hypothyroidism would have seriously affected Ms. Gherardini's fertility, but it is admitted that she had five children. He rather attributes her skin color to the effect of the elapsed time. Dr. Yafi said he felt "personally responsible" for Lisa's defense. "I could not let the public think that she had hypothyroidism, when she seems to be euthyroid," he said.

Another diagnosis can be advanced: a hereditary pathology of the whole connective tissue, including skin and appearance: Ehlers-Danlos syndrome that is common but never or diagnosed very late by doctors.

From Madonna facies to the enigmatic smile of Mona Lisa

In Ehlers-Danlos syndrome, the face has been the subject of special observations from its descriptors. The "Madonna facies" is part of the traditional descriptions of this disease. It has been selected by some authors, especially the geneticists [8], who have coined it as a sign suggestive of the presence of arterial aneurysms in the so-called "vascular" forms of the disease. This interpretation does not correspond to the reality of the clinical pictures that we observed [9] in a cohort of more than 5,700 patients, followed for 25 years. In fact, all our patients have these same faces. Some people have pointed this out to us by observing that all the patients present in the consultation's waiting room had the same "smooth" appearance of the face. It therefore seemed more realistic to compare our patients' particular look with the well-known and unique Mona Lisa, rather than the highly variable aesthetics of one Madonna to another. For several years now, we have decided to give the Ehlers-Danlos face's appearance the name of "Mona Lisa's sign", hoping also to further familiarize the medical profession with this pathology forgotten by medicine. It should be noted that in this disease that is systematically transmitted to all men and women who have an affected relative, the functional manifestations are much more marked in women for reasons related to their hormonal status (Figure 1).

Mona Lisa suffered from an Ehlers-Danlos syndrome

A series of manifestations of Ehlers-Danlos' disease make it possible to explain the similarity of the faces of the patients concerned with that of the Mona Lisa. The texture of the skin first: it is thinned. This decrease in thickness results in a lessened filtering of the currents produced by static electricity and causes sensations of electric discharges in contact with a metallic object such as a caddy or a car door. This skin is flexible, stretches easily and does not fold easily during mimicry or under the effect of age. It is pale, ill-enduring the effects of ultra-violet radiations that provoke more readily erythema than a tanned skin. This "immobile" aspect of the face is further accentuated by a phenomenon that occupies a considerable place in the clinic of this pathology: a global proprioceptive disorder that is also expressed in the face. It is explained by the poor quality of the signals emitted by sensory sensors immersed in a tissue with modified mechanical behavior, most often in the sense of absence of reactivity. This influences the expressions of the face's muscles. For example, an emergency resident at the Hotel-Dieu hospital in

Figure 1: Leonardo da Vinci Museum. Le Clos Luce France.

Paris, who was receiving one of my Ehlers-Danlos patients who was suffering from one of these very violent and painful crises, stated: "I did not give him a powerful analgesic because his face did not express significant suffering." These other visible skin's features have another consequence: the patients appear much younger than their age. This is a warning sign, especially during a family survey. Frequent pains, subluxations or temporomaxillary joints blockages also contribute to limit facial expressions. We can associate often-encountered bruxism, which was mentioned among the hypotheses emitted to explain how the Mona Lisa looks 9 (Figure 2,3).

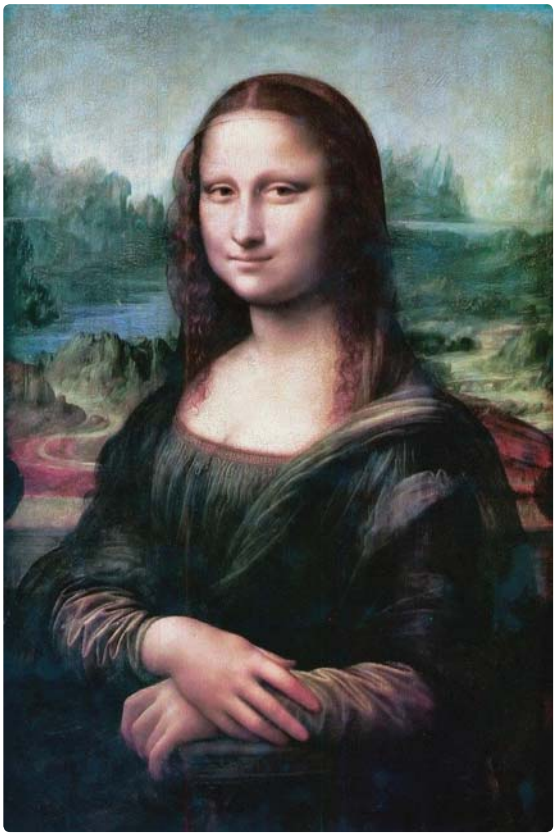

Figure 2: Mona Lisa. Leonardo da Vinci. 1503. Le Louvre Museum. Paris.

Figure 3: A woman with an Ehlers-Danlos published by Ouest France, a french Newpaper.

Mona Lisa's look fascinates

Ehlers-Danlos syndrome patients have a particular gaze because of binocular vision coordination difficulties and head and eyes movement's harmonization problems. Here again, Mona Lisa has similarities with these people: convergence of the two eyes is not perfect and direction of the gaze does not correspond to the orientation of the head. This singularity makes the viewer uncomfortable with the painting because it gives him the feeling that Mona Lisa faces him regardless of his position in front of the tableau.

DISCUSSION

Other manifestations could be related to the diagnosis that we have put forth such as the absence of eyebrows since integuments are conjunctive tissue and alterations of the hair and nails are frequent in this pathology. It is the same with the skin coloration. A goiter cannot be excluded in the hypothesis of an Ehlers-Danlos syndrome because tissue proliferations, in the form of nodules or cysts, are frequent. The differential diagnosis of hypothyroidism is complicated by the fact that in this disease, hypothyroidism is frequent in the context of diffuse involvement of connective tissues, therefore endocrine glands. Mona Lisa may not be as "euthyroid" as Dr. Safi thinks. The appearance of the hands could have provided an additional argument by highlighting this very common sign of hyperlaxity: the projection of the lower end of the ulna subluxation but it is not clearly visible.

CONCLUSION

Da Vinci's admirable masterpiece, beyond all the emotions it has produced and continues to produce, reveals another quality that is perhaps one of the hidden reasons for his success. It helps to reveal, by introducing beauty, a medical reality that is too often misunderstood: a frequent disease that is more expressed in women, reshaping the body and posing in a completely new manner the way of appearing in the eyes of others. Therefore, we believe that it could symbolize Ehlers-Danlos in a more prospective way than the zebra that has been retained by associations, especially American ones. The choice also meets the question of appearance since it comes from the observation that when you hear a horse gallop it can also be that of a zebra. The reality is that people are not identified for what they are and consider themselves as invisible disable persons when they are not considered as psychiatric patients.

REFERENCES

1. Dequeker J, Muls E, Leenders K. Xanthelasma and lipoma in Leonardo da Vinci's Mona Lisa. Isr Med Assoc J. 2004; 6: 505-506. **PubMed:** https://www.ncbi.nlm.nih.gov/pubmed/15326839
2. Ose L. The real code of Leonardo da Vinci. Curr Cardiol Rev. 2008; 4: 60-62. **PubMed:** https://www.ncbi.nlm.nih.gov/pubmed/19924278/
3. Maloney WJ. Bell's palsy: the answer to the riddle of Leonardo da Vinci's "Mona Lisa". J Dent Res. 2011; 90: 580-582. **PubMed:** https://www.ncbi.nlm.nih.gov/pubmed/20929717
4. Ashrafian H. Leonardo da Vinci's Mona Lisa: medical differentials and primary biliary cholangitis. Acta Gastroenterol Belg. 2016; 79: 375-379. **PubMed:** https://www.ncbi.nlm.nih.gov/pubmed/27821036
5. Ponzetto A, Figara N, Holton J. Mona Lisa and postpartum hypothyroidism. Mayo clinics proceedings march 2019 ; 94: 544.
6. Mehra MR, Campbell HR. The Mona Lisa decrypted: Allure of an imperfect reality. Mayo Clin Proc. 2018; 93: 1325-1327. **PubMed:** https://www.ncbi.nlm.nih.gov/pubmed/30193676

7. Yafi M. Mona Lisa is euthyroid: a modern-day diagnosis. Hormones (Athens). 2019; 18: 331-332. **PubMed:** https://www.ncbi.nlm.nih.gov/pubmed/30835061

8. Malfait F, Francomano C, Byers P, Belmont J, Berglund B, Black J, et al. The 2017 International classification of the Ehlers-Danlos Syndromes. Am J Med Genet C Semin Med Genet. 2017; 175: 8-26. **PubMed:** https://www.ncbi.nlm.nih.gov/pubmed/28306229

9. Hamonet C, Brissot R, Anne Gompel A, Baeza Velasco C, Guinchat V, Brock I, et al. Ehlers Danlos syndrome, conribution to clinical diagnosis - A prospective study of 853 patients". EC Neurology 10.6. 2018; 428-439. https://bit.ly/2PzOYCA