



LETTER TO THE EDITOR

Noncompaction in Fabry's disease



Não compactação na doença de Fabry

To the Editor,

We read with interest the article by Martins et al. about the first patient reported with X-linked Fabry's disease associated with left ventricular hypertrabeculation/noncompaction (LVHT).¹ We have the following comments and concerns.

There is a long-term debate about the pathogenesis of LVHT.² Most studies indicate that LVHT derives from an early defect of embryonic cardiac development.³ However, there are individual cases in which LVHT was not present on previous echocardiographic investigations and was thus assessed as 'acquired LVHT', unlike the more common congenital variant.⁴ Did the patient presented undergo previous echocardiographic or cardiac MRI investigation? Was LVHT present on these previous studies?

LVHT is associated with a large number of mutated genes but a causal relation between LVHT and associated mutations has not been proven. To assess the relationship between the mutation and LVHT it could be helpful to investigate other family members for LVHT and Fabry's disease. Since LVHT occurs in families other family members should be always investigated for LVHT. If other family members present with LVHT and Fabry's disease as well, a causal relation becomes quite likely. A further argument for a causal relation is that Fabry's has been reported in association with hypertrophic cardiomyopathy,⁵ both apical⁶ and obstructive⁷ types. How certain are the authors of a causal relation between the p.R220X mutation in the GLA gene and LVHT in the patient presented?

LVHT is also frequently associated with neuromuscular disorders⁸ and Fabry's disease manifests in the muscle as well due to glycosphingolipid accumulation in myocytes and muscular arteries.⁹ Was there any evidence of muscle disease in the described patient? Were there clinical indications of muscle disease such as muscle weakness, wasting, cramp-

ing, or easy fatigability? Were muscle enzymes elevated? Was the patient seen by a neurologist? Did she undergo electromyography or muscle biopsy? Additionally, Fabry's disease can be associated with small fiber neuropathy.¹⁰ Did the patient report sensory or motor disturbances, or neuropathic pain? Did she have a history of compression neuropathies? Did she undergo nerve conduction studies or nerve biopsy? Did the authors consider a double trouble?

Since LVHT carries a certain risk of cardioembolism due to thrombus formation within the intertrabecular spaces, it would be interesting to know if the patient presented had a previous history of stroke/embolism, or if she ever underwent cerebral MRI to see if there were subclinical embolic events detectable in the brain. Was the family history positive for stroke, syncope, sudden cardiac death, or peripheral embolism?

Overall, the report by Martins et al. could profit from more extensive evaluation of this interesting patient. Family screening is warranted as well as neurological investigation, electromyography, nerve conduction studies, and cerebral MRI. To gain more insight into the pathogenesis of LVHT, we should comprehensively investigate each patient, particularly if LVHT is associated with a novel mutated gene.

Conflicts of interest

The authors have no conflicts of interest to declare.

References

1. Martins E, Pinho T, Carpenter S, et al. Histopathological evidence of Fabry disease in a female patient with left ventricular noncompaction. *Rev Port Cardiol.* 2014;33:565.e1–6.
2. Peters F, Khandheria BK. Isolated left ventricular noncompaction: what do we really know? *Curr Cardiol Rep.* 2012;14:381–8.
3. Kosaka Y, Cieslik KA, Li L, et al. 14-3-3 ϵ plays a role in cardiac ventricular compaction by regulating the cardiomyocyte cell cycle. *Mol Cell Biol.* 2012;32:5089–102.
4. Finsterer J, Stöllberger C, Schubert B. Acquired left ventricular noncompaction as a cardiac manifestation of neuromuscular disorders. *Scand Cardiovasc J.* 2008;42:25–30.
5. Elliott P, Baker R, Pasquale F, et al. Prevalence of Anderson-Fabry disease in patients with hypertrophic cardiomyopathy: the European Anderson-Fabry Disease survey. *Heart.* 2011;97:1957–60.

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6. Caetano F, Botelho A, Mota P, et al. Fabry disease presenting as apical left ventricular hypertrophy in a patient carrying the missense mutation R118C. *Rev Port Cardiol.* 2014;33:183.e1–5.
7. Geske JB, Jouni H, Aubry MC, et al. Fabry disease with resting outflow obstruction masquerading as hypertrophic cardiomyopathy. *J Am Coll Cardiol.* 2014;63:e43.
8. Finsterer J, Stöllberger C. Unclassified cardiomyopathies in neuromuscular disorders. *Wien Med Wochenschr.* 2013;163: 505–13.
9. Chimenti C, Padua L, Pazzaglia C, et al. Cardiac and skeletal myopathy in Fabry disease: a clinicopathologic correlative study. *Hum Pathol.* 2012;43:1444–52.
10. Bertelsen AK, Tøndel C, Krohn J, et al. Small fibre neuropathy in Fabry disease. *J Neurol.* 2013;260:917–9.

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