

An unusual device-related complication: multiple painful stones after explantation of a subcutaneous Holter system

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We report a case of a patient who had persistent local pain after explanting a subcutaneous Holter system. After surgical intervention, macroscopically, we found several nodular calcified formations. Microscopically, there was a dense fibromuscular tissue, encapsulating degenerated material. To our knowledge, this severe local reaction after implantation of subcutaneous cardiac devices has not been previously described.

Clinical case

The patient was a 67-year-old woman. She had congenital mitral stenosis and had undergone a closed mitral commissurotomy in 1966, and required reintervention for implantation of a St Jude mechanical mitral prosthesis in 2000. The patient presented recurrent syncope and worsening of heart failure functional class up to NYHA II–III and, at another hospital, had an implanted subcutaneous Holter system for study of syncope. The patient was referred to our hospital several months later, due to recurrent episodes of heart failure in order to implant cardiac resynchronization. Two weeks later, the subcutaneous Holter system was explanted uneventfully. However, the patient had persistent local pain without evidence of infection or local inflammatory signs and we indicated surgical revision. We found several nodular formations. The samples were sent for pathological study, reported as a brownish nodular fragment, with adhering adipose tissue, and a stony consistency. It presented a clear nodulation containing pasty-looking spiculated calcium. There was a dense fibromuscular tissue, encapsulating degenerated material with basophilic and calcified areas (Figure 1). With haematoxylin–eosin $\times 40$, it was identified as a background fibrous sclerotic scar with a mixed inflammatory infiltrate, predominantly lymphocytic.

In our patient, the initial inflammatory response probably resulted in an organization with extreme foreign body reaction. This resulted in adhesions to the surface of macrophages and differentiated giant cells, surrounding the subcutaneous Holter system with an exuberant fibrous tissue growth, and the development of multiple calcifications. The treatment was to clean the pocket with removal of all granulomas and calcifications. Six months later, the patient remained stable and asymptomatic. The deposition of calcium-containing mineral apatite occurs widely in association with medical devices and biomaterials.^{1–3} However, its presence as a severe local reaction after implantation of subcutaneous cardiac devices has not been previously described to our knowledge. Although some devices are easy to implant, they may carry some complications, particularly in complex patients.

Conflict of interest: none declared.

References

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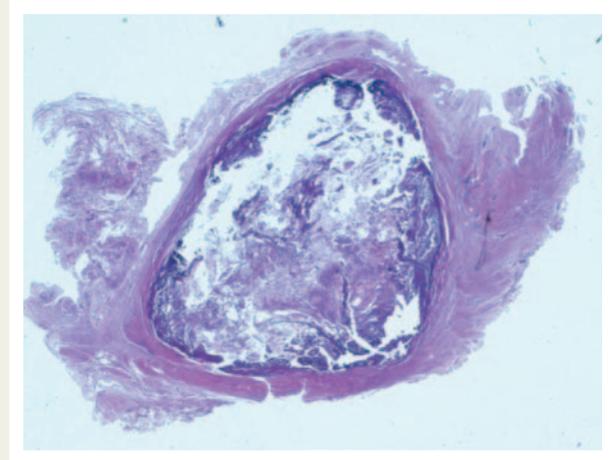


Figure 1 Nodular tissue fragment of brownish colour, with adhering adipose tissue. Haematoxylin–eosin technique: there is a dense fibromuscular tissue, with a well-defined nodule, apparently encapsulated, containing degenerated material, basophilic, and calcified areas.

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