

Prevalence of Twiddler's Syndrome May Be Higher in the Internal Pulse Generators Harboring One Anchoring Hole Than Two Anchoring Holes.

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Introduction

Twiddler syndrome (TS) is described as a spontaneous rotation or intentional external manipulation of implanted cardiac or occasionally deep brain stimulation (DBS) devices (1,2). The predisposing factors for development of TS are well described (3,4). Additional factor related to the construction of the implanted hardware itself may be the number of anchoring holes in the IPG.

Methods

A prospectively collected database of all hardware related complications for patients operated on was performed. In a total number of 347 leads implanted in 211 patients since 1999 we have identified 3 patients diagnosed with TS. The representative case is presented in Figure 1. All 3 patients with TS in our series were implanted with the IPG harboring one anchoring hole. This complication did not occurred in patients with the IPG harboring two anchoring holes.

Conclusions

All 3 patients underwent revision surgery. During reoperations all IPGs were replaced and sutured with one additional silk suture through the plastic housing of the IPG to immobilize it properly in subcutaneous pocket. There were no recurrences of TS in our patients. All patients gained the previously derived benefit from STN DBS.

Results

Learning Objectives

The main learning objectives of this report are as follows:

1) To recognize Twidller syndrome.

2) To know the predisposing factors related to Twidller syndrome.

3) To stress the importance of proper fixation of the internal pulse generator in the subcutaneous poket.

4) To manage surgically this uncommon hardware-related complication.

Our case series suggests that a predisposing factor of TS may also be the construction of IPG itself (one anchoring hole intended for fixation) which naturally represents less fixation of the IPG to the fascia or muscle in the subcutaneous pocket. This preliminary report may favor the IPG with two anchoring holes which is less prone for development of TS. Placing additional silk suture that pass through a plastic housing of the IPG may help better immobilize the IPG and reduce the occurrence of TS.

References

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Figure 1 (A) Chest X ray showing extremely coiled connection cable. (B) The white arrow indicates the point of fracture of the connection cable. (C) The view of the extremely coiled connection cable. (D) The removed connection cable.





