REVIEW ARTICLE
Volume - 10 | Issue - 01 | January - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

REEL SYNDROME: A REVIEW

Cardiology

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ABSTRACT

The number of cardiac rhythm device implantations has been growing fast due to expanding indications and ageing of the population. Lead dislodgement requiring reoperation is a complication that raises the costs of pacemaker implantation surgery, while adding to patient discomfort.

KEYWORDS

Twidler's syndrome, Reel syndrome, Lead Dislodgement.

CASE DISCUSSION

We have done 87 permanent Pacemakers in our department over last 7 years. Only one patient came with Pacemaker lead complication. Therefore the incidence of complication would be 1.1% .

73 years old overweight lady presented to us with recurrent episodes of giddiness. ECG showed Complete heart block. She was treated with Single chamber Permanent pacemaker VVI mode [VENTRICULAR PACING, VENTRICULAR SENSING, INHIBITING MODE], using a screwing lead via left subclavian artery. One month later she returned with recurrent episodes of giddiness again. ECG did not show paced beats. Chest X-ray demonstrated lead dislodgement and it's coiling around the pulse generator [Figure 1 & 2]. We diagnosed her with Reel syndrome. We opened the pacemaker pocket, uncoiled the leads, repositioned, and connected to the same generator. The leads and pulse generator were fixed tightly to the fascia. [Video 1] The post-reimplantation period was uneventful during a 1-year follow-up.

Figure 1. Chest X ray Showing Coiling Of The Pacemaker Lead In To The Subclavian Vein

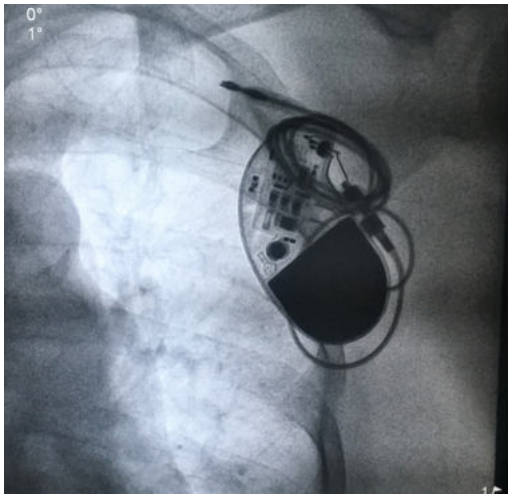

Figure 2. Fluoro Run Showing Coiling Of Pacemaker Lead In To The Subclavian Vein.

DISCUSSION

Lead dislodgement is an unusual complication and a significant dangerous occurrence. Twiddler's Syndrome, first described by Bayliss, refers to a permanent malfunction of the pacemaker as a result of rotation of the device along its long axis, causing lead dislodgement.[1, 9] The reported incidence is 0.07–1.1%. [2,10] It is frequently observed in overweight female patients with loose, fatty subcutaneous tissue.[3]

Reel syndrome is caused by the torsion of the pulse generator on its transverse axis with subsequent coiling of the pacemaker leads around the pulse generator.[4] Ratchet syndrome is another mechanism of lead retraction, caused by ratchet-like movement of the lead through the suture sleeve.[5,6] [Figure 3]

Twiddler's and Reel syndromes have similar aetiologies; female gender, large pocket, obesity, children, older people and dementia can be listed as contributing factors and their prevalence is unknown. Reel syndrome commonly occurs within a month of implantation and normally there is no damage of the leads. This is the reason why normally there is no need of lead change, unlike Twiddler's syndrome where the leads are normally damaged and their replacement is usually mandatory. [7]

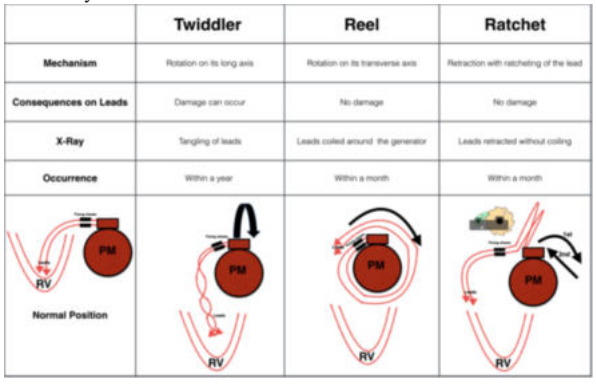

Figure 3. Differences among the macrodislocation lead-dysfunctioning syndromes. PM, pacemaker; RV, right ventricle.[5]

Similar to Twiddler's syndrome, Reel syndrome may also lead to electrode dislocation or fracture followed by several clinical symptoms such as presyncope, syncope, or even death in patients with absolute pacemaker dependence.

Expedient pocket and lead revision constitutes the mainstay of therapy. Prevention of the syndrome can be achieved through suturing of the pulse generator to fascia, submuscular implant and use of active fixation leads.

CONCLUSION

Twiddler's Syndrome and its variants are potentially life threatening condition usually occurring within the 1st year of device implantation. Patients can be asymptomatic or present with diaphragmatic or brachial plexus stimulation or syncope or VT. Diagnosis can be readily achieved using chest X ray or fluoroscopy. Recognizing these complications early in pacemaker dependent

patients can prevent life threatening complications and is therefore of paramount importance.[8]

Conflict Of Interest

None.

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