

Case Report

Extraction of a 30-Year-Old Pacemaker Lead Implanted Through the Right Femoral Vein Using a Combination of Sheaths and a Femoral Work Station: A Case Report

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Abstract

Pacemaker lead extraction is a challenging and potentially risky procedure, especially when dealing with leads that have been implanted for a long period of time [1]. In this case report, we present a 45-year-old patient who required the extraction of a 30-year-old pacemaker lead implanted through the right femoral vein. We used a combination of sheaths and a femoral work station to safely extract the lead.

INTRODUCTION

Pacemaker lead extraction is a complex procedure that requires careful planning and execution. The procedure becomes even more challenging when dealing with leads that have been implanted for an extended period of time. In this case report, we present a patient who required the extraction of an old pacemaker lead implanted through the right femoral vein.

CASE REPORT

A 45 year old male with a history congenital Complete AV Block, with a first trans venous pacemaker implant at 7 years old, then a pocket infection with the removal of the pacemaker and lead, remaining the tip. Then a new transvenous implant on the contralateral side, with a new infection and bacterial endocarditis, which need open heart surgery when he was 15 years old [Figure 1]. Through a right femoral approach a pacemaker was implanted 30 years ago. A genograms showed the obstruction of both subclavian veins and the superior vena cava. After a third pacemaker change, he presented with a pocket infection. An echocardiogram showed no vegetation. Positive blood cultures for coagulase negative staphylococcus. After discussion with the

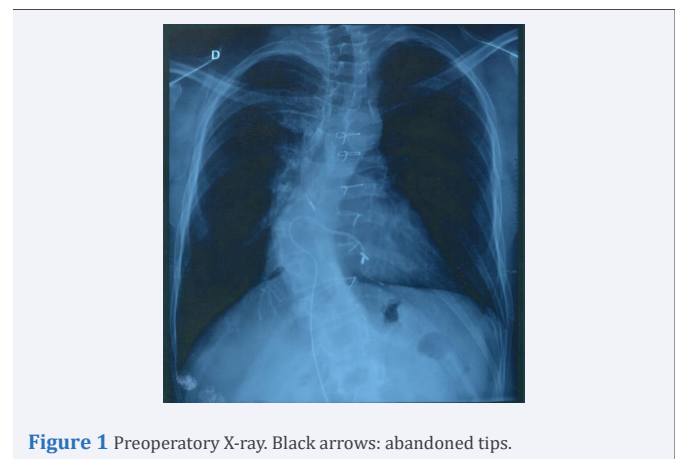


Figure 1 Preoperative X-ray. Black arrows: abandoned tips.

patient and his family, it was decided that the lead would need to be extracted [2].

The lead was implanted through the right femoral vein (Unknown model), which posed a challenge for lead extraction. We used a combination of sheaths and a femoral work station to safely extract the lead. A locking style (Spectranetics/Philips) was

used to lock the lead in place. We then used a series of sheaths, including metal sheaths (medium) (Cook Medical) to enter into de Femoral and Iliac vein, polypropylene sheaths (10 and 11.5 Fr) (Cook Medical) through the iliac vein, and a Tight Rail (11 Fr) (Spectranetics/Philips) along the inferior vena cava for along 45 cm from the entrance, and then a Byrd Femoral Work Station (Cook Medical) to remove the lead, (Figure 2). Calcium rings were found along the lead. There was scar tissue all along the lead in the femoral, iliac and the inferior vena cava (Figure 3 Computed tomography). Tools used, were for the superior



Figure 2 Femoral work station. The sheath entering the right ventricle.



Figure 3 TAC showing scar tissue along the lead.



Figure 4 Post-operative X-ray Black arrows: abandoned tips.

approach, and the only sheath that reached the heart was the femoral work station. Sheaths were change due to the tortuosity of veins. The tip was left inside the heart, with a procedure clinical success [Figure 4]. During the procedure, heart rhythm was maintained with temporary epicardial lead. A dual chamber epicardial pacemaker was implanted in the same procedure, with two screws in bipolar leads, with steroids. Nine months later, uneventful post-operative.

DISCUSSION

The extraction of a pacemaker lead implanted through the right femoral vein is a challenging procedure. In this case, we used a combination of sheaths and a femoral work station to safely extract the lead. The use of a locking style and various sheaths allowed us to navigate the lead through the patient's venous system and safely remove it.

CONCLUSION

The extraction of a 30-year-old pacemaker lead implanted through the right femoral vein using a combination of sheaths and a femoral work station is a challenging but achievable procedure. Careful planning and execution, along with close monitoring of the patient's vital signs can lead to a successful outcome.

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