Femoral vein occlusion following Mc-Vay repair

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Summary: Three cases of femoral vein occlusion following a Mc-Vay repair for femoral and inguinal hernias are presented. Phlebography demonstrated constriction of the femoral vein at the site of the repair. This complication is due to compression of the femoral vein by too tight a repair.

Introduction

Due to the very large number of hernia repairs performed, even rare complications attain significant proportions. Testicular atrophy, osteitis pubis, intestinal obstruction and sinus tract formation have all been reported (Condon & Nyhus, 1971).

Little has been written (Brown et al., 1980; Nissen, 1975) on deep vein thrombosis due to damage of the femoral vein following Cooper's ligament (Mc-Vay) repair for femoral and direct inguinal hernias.

Three cases with documented constriction and thrombosis of the femoral vein at the site of the Mc-Vay repair are presented. They were collected over a ten year period in the surgical department of the Hadassah Hospital in Tel Aviv.

Case reports

A 68 year old woman was admitted with an irreducible femoral hernia. The hernia was explored by the inguinal approach, the viable bowel reduced and a Mc-Vay repair performed. The post-operative course was uneventful until the fourth day when marked oedema of the entire right leg was noted. The diameter of the calf exceeded the unaffected leg by 5 cm. The saphenous vein was engorged without superficial phlebitis. A diagnosis of deep vein thrombosis was made. A continuous intravenous heparin drip of 40,000 units/day and bed rest were initiated. Phlebography demonstrated total occlusion of the femoral vein 2–3 cm below the site of the repair. (Figure 1). Heparin therapy was continued for 10 days, followed by warfarin treatment over the next 3 months. Complete recovery was achieved after 2 weeks. Follow-up phlebography performed 4 months later demonstrated a constricted femoral vein at the level of the inguinal ligament and a rich collateral circulation. The patient was asymptomatic.

Two additional cases were seen. The first occurred in a 79 year old man who underwent a Mc-Vay repair for a direct inguinal hernia. One week post-operatively he developed signs of deep vein thrombosis on the side of the operation. The second case occurred in a 70 year old woman in whom a Mc-Vay repair was carried out for a femoral hernia. She too developed signs of deep vein thrombosis on the ipsilateral leg. In both cases obstruction of the femoral vein at the level of inguinal ligament was demonstrated by phlebography.

Discussion

The Mc-Vay Cooper's ligament repair (Mc-Vay & Anson, 1949 for direct inguinal and femoral hernias is an accepted, common and low risk surgical procedure. Complications other than wound infection and recurrent hernia are rare. However, due to the great number of repairs performed attention should be directed towards relatively unfamiliar complications.

In this operation, the transversalis aponeurosis and fascia are sutured laterally to Cooper's ligament (superior pubic ligament). Sutures are placed beginning medially at the pubic tubercle and extending as far laterally as the femoral vein. The next suture is placed deeply into the pectineus fascia and more laterally, through the anterior layer of the femoral sheath. If these sutures are carried too far laterally before transition is made in the anterior layer of the femoral sheath, compression of the vein might occur. Compression on the femoral vein may also be caused by more superficial layers of repairs, a deep...
haematoma or abscess formation. Mistaken suturing through part of the femoral vein could serve as a nidus for thrombus formation. One or more of the above factors could contribute to narrowing or injury of the femoral vein. Compression initiates venous stasis and subsequent thrombosis leading to partial or complete occlusion of the vein.

Very little has been reported (Condon & Nyhus, 1971; Nissen, 1975) about thrombosis and constriction of the femoral vein at the site of the repair. The clinical presentation is the same as for any deep vein thrombosis. It usually appears 3 to 8 days following surgery. However, constriction of the femoral vein with thrombus formation has been reported (Brown et al., 1980) without any apparent clinical signs, only to be discovered by phlebography in the aftermath of pulmonary emboli. Femoral vein thrombosis, following a McVay repair may therefore occur at a higher rate than suspected.

The treatment of this complication is conservative with anti-coagulants. Recanalization and collateral venous formation usually occur.

This preventable complication exemplifies the necessity for meticulous and cautious technique in Cooper’s ligament repair, in order to avoid constriction of the femoral vein. Oedema of the ipsilateral leg or development of pulmonary emboli following McVay repair should alert the surgeon to the possibility of this complication.

References

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