Results of microsurgical anastomosis in men with seminal tract obstruction due to inguinal herniorrhaphy

JA Daitch, FF Pasqualotto, A Agarwal, and AJ Thomas, Jr.; Center for Advanced Research in Human Reproduction & Infertility, Department of Urology, The Cleveland Clinic Foundation, Cleveland, OH

Objectives: Herniorrhaphy is the most common cause of iatrogenic vasal obstruction. The incidence of injury to the vas deferens during hernia repair ranges from 0.3% to 2.0%. The purpose of our study was to assess the patency rates and long-term fertility outcome after microsurgical repair of vasal obstruction due to inguinal herniorrhaphy.

Design: Retrospective study

Material and Methods: Twenty procedures were performed on 13 men diagnosed with infertility and vasal injury due to inguinal hernia repair. Eight patients had bilateral and 5 unilateral inguinal herniorrhaphy. Six underwent a second microsurgical procedure due to primary vasovasostomy failure, and one patient underwent two procedures simultaneously. Of the 20 procedures, 12 were inguinal vasovasostomies (IVV), 3 crossover vasovasostomies (COV), 2 inguinal vasovasostomies (IVV), and 3 crossover vasovasostomies (COVE). The indications for the reanastomosis were infertility (n = 12) and testicular pain (n = 1). Prior to the initial procedure, eight patients were azoospermic, three were oligospermic, and two asthenospermic. Four patients had a unilateral atrophic testis, 3 had unilateral congenital absence of the vas deferens, 1 had an orchectomy due to undescended testis, and 1 had an undescended testis. The mean patient age was 32 years (range 26-36), and the mean obstruction interval was 25.4 years (range 3-40). Follow-up was obtained via chart review and telephone interview. Patency was defined as the presence of long-tailed sperm in the postoperative semen analysis. Patency data was obtained on all 13 patients, and pregnancy data was available for 10 couples (77%) at a mean follow-up of 69.5 months (range 13-181).

Results: For the 20 procedures, the overall patency rate was 65% (13/20). In the vasovasostomy group, the patency rate was 60% (9/15) and in the vasoepididymostomy group it was 80% (4/5). Among eight azoospermic patients, thirteen procedures were performed (7 VV, 4 VE, and 1 simultaneous VE and contralateral VV). For these azoospermic patients, patency rate was 42.9% for the VV procedure (3/7), and 100% for the VE procedure (4/4). The patient who underwent simultaneous VV and VE had a patent anastomosis on initial follow-up, but subsequently became azoospermic. The overall pregnancy rate was 40% (4/10). Of interest, none of the six patients who had undergone only vasovasostomy fathered a pregnancy. In contrast, four of the five (80%) patients who underwent VE did father a pregnancy. The singular failure was in the patient who had undergone simultaneous left VE and right VV.

Conclusions: Microsurgical VV after inguinal vasal injury results in high patency rates, but poor pregnancy rates. This may be due to concurrent partial epididymal obstruction or recurrent partial or complete vasal obstruction. VE may be needed as a secondary procedure and COVE appears to be a better surgical alternative than inguinal VV when appropriate. We are currently pursuing new techniques which allow more extensive mobilization of the abdominal vas with its blood supply. This may improve the results of VV after injury to the inguinal vas deferens.