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JOURNAL ARTICLE

# Tunica vaginalis sperm reservoir in a monkey model of vas deferens obstruction

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Repeat microscopic epididymal sperm aspiration (MESA) is used to treat congenital absence of the vas deferens (CAVD). Use of alloplastic implants as reservoirs results in poor sperm motility and pregnancy rates. An autoplastic tunica vaginalis reservoir for epididymal sperm has been used in four patients, with one resultant pregnancy. We studied this technique in a monkey model. Eight reservoirs were created in four monkeys (Cercopithecus aethiops). The vas deferens was ligated close to the epididymis. A transverse incision was made in the caput epididymis, and sperm were aspirated for analysis. Cut margins of the epididymal duct were sutured open to the visceral layer of the tunica vaginalis. The defect in the parietal layer of the tunica vaginalis was repaired, and sterile Tyrode's solution was instilled in the potential space between the parietal and visceral layers. Initial epididymal sperm obtained at the creation of the sperm reservoir demonstrated adequate mean motility (60.5%, grade 1.5), morphology (82.8% normal), and viability by Eosin-Y exclusion (69.9%). At 4 weeks, no reservoirs were palpable. Percutaneous aspiration (25-gauge angiocatheter) yielded no fluid. Surgical exposure of the reservoirs demonstrated significant adhesions and scar formation between the parietal and visceral layers of the tunica vaginalis, obliterating the potential space. No sperm were detected in irrigant fluids at this time. In conclusion, adhesion and scar formation may prevent use of the tunica vaginalis reservoir as an alternative to repeat MESA in treatment of CAVD.