

Andrology and fertility

Infertility secondary to an infected hydrocele: A case report

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ABSTRACT

Hydroceles are one of the most common causes of scrotal swelling affecting around 1% of the adult population. While hydroceles are usually asymptomatic, some hydroceles can lead to infertility. We will present a case of a 34-year-old man who was referred to our center as a case of primary infertility (sever oligospermia 1.1 million/ml) for 4 years and was found to have bilateral hydroceles (infected right hydrocele). At 18 months post bilateral hydrocelectomy, the patient's total sperm count improved to 43 Million/ml. Therefore, we highly recommend considering hydrocele as an etiology in any patient with idiopathic infertility.

Introduction

Hydrocele is one of the most common causes of scrotal swelling. It is defined as an abnormal free-fluid collection between the visceral and parietal layers of tunica vaginalis with incidence of 4.7% in neonates and is referred to as a congenital hydrocele. Congenital hydrocele forms due to a patent processus vaginalis. When it happens later in life, it is usually referred to as a non-congenital or acquired hydrocele and it affects around 1% of adult population. While some of the acquired hydroceles are secondary to trauma, infection or malignancy, the majority of them are idiopathic. The exact mechanism behind Idiopathic hydroceles is still not fully understood. Theories such as increased serous fluid secretion, lack of efferent lymphatics and inadequate re-absorption of fluid secreted by the mesothelium are possible explanations. Although, hydroceles usually present as painless masses causing no health-related consequences, some can lead to sexual dysfunction and infertility.¹ To the best of our knowledge, only few papers in the literature have addressed the effect of hydrocele on male fertility.^{2,3} We report a case of infertility due to an infected hydrocele which was completely reversed after hydrocelectomy.

Case presentation

This 34-year-old gentleman is a known case of primary infertility for 4 years. Initial semen analysis showed a picture of Asthenospermia (28

million/ml, motility 35%). Scrotal ultrasound was done and revealed bilateral subclinical varicoceles. Consequently, the patient underwent bilateral varicocelectomy at his local hospital. Couple of months later, the patient started to develop bilateral scrotal swellings associated with bilateral vague scrotal pain, more pronounced in the right side. As a result, scrotal ultrasound was done and showed evidence of bilateral marked hydroceles plus bilateral testicular microlithiasis. At this point, the patient was referred to our center for further evaluation and management. Upon presentation, semen was obtained for analysis and showed a picture of oligoasthenospermia (1.1 million/ml, motility 36%). Scrotal ultrasound was done and showed medium to large left-sided hydrocele 7.0 × 3.7 × 4.6 cm (Fig. 1) and a medium to large right-sided septated hydrocele with microlithiasis measuring 9.9 × 6.5 × 6.7 cm (Fig. 2). As a result, the patient underwent bilateral hydrocelectomy where around 200 cc of a thick brownish fluid was drained from the right hydrocele and sent for culture. As the culture came positive for *Klebsiella pneumoniae*, the patient was prescribed a 7 days course of Augmentin and he remained on regular dressing till his wound healed completely after 4 months post operatively. At 5 months post operatively, the patient's semen analysis showed a marked improvement in comparison to the pre operative one. Total sperm count improved to 27 Million/ml and total motile sperms were 60%. At 18 months post hydrocelectomy, the patient remained asymptomatic and his semen analysis showed a total count of 43 Million/ml with the same sperm motility percentage.

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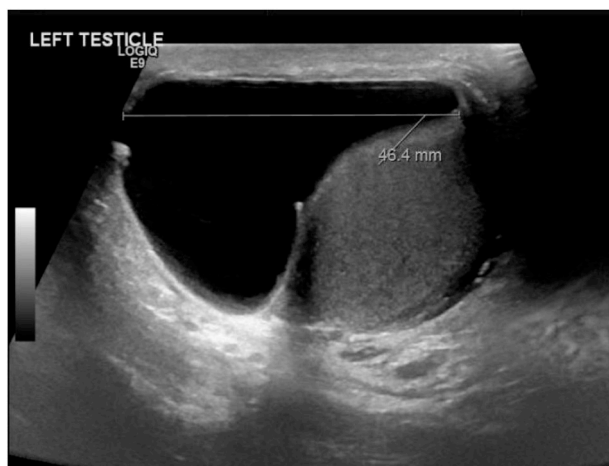


Fig. 1. Left testis surrounded by 7.0 × 3.7 × 4.6 cm hydrocele.



Fig. 2. Right testis surrounded by right-sided septated hydrocele with Micro-lithiasis measuring 9.9 × 6.5 × 6.7 cm.

Discussion

Hydrocele is one of the most commonly diagnosed scrotal swellings affecting approximately 1% of adult men. Hydroceles affect bilateral

testicles in approximately 7–10% of the cases, are usually asymptomatic and cause no complications. However, when they grow to larger sizes or get infected, they may result in serious complications such as sexual dysfunction, infertility, rupture, pyocele, Fournier's gangrene, and testicular ischemia.¹ With regard to hydrocele effect on fertility, some studies showed that men with hydrocele may have partially or totally absent spermatogenesis.² At the cellular level, testicles surrounded by hydrocele are found to have interstitial fibrosis, thickening of the basement membrane, and disorganization of spermatogenic cells.² Additionally, spermatogenesis arrest may result from increased pressure on the testicular blood supply resulting in compromised testicles. Douglas et al. reported a case of a successfully reversed compromised testicle secondary to testicular compartment syndrome after hydrocelectomy.⁴ Furthermore, hydrocele may produce infertility due to increased temperature of the hydrocele, as water is resistant to transmission of heat.³ Regarding our patient, he presented with oligospermia (1.1 million/ml) secondary to infected hydrocele as a complication to varicocelectomy. After hydrocelectomy and proper antimicrobial regimen the patient's fertility status showed a marked improvement proven by serial post operative semen analyses. It is known that spermatogenesis has a direct link with scrotal temperature and requires a temperature of at least 1–2 °C below core body temperature.⁵ As infection increases blood supply to the affected site resulting in increased temperature, we believe this is one of the factors that participated in our patient's impaired spermatogenesis. Given the fact that hydrocele has been reasonably linked to impaired spermatogenesis as proven in the literature² along with previously mentioned theories,^{3,4} we recommend evaluating hydrocele as an etiology in any patient presenting with idiopathic infertility. This report demonstrates the need for further studies assessing the effect of hydrocele on male fertility particularly in bilateral hydroceles.

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