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Case Report

A self-treatment case report: curing hydrocele by intracapsular injection of polidocanol

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Abstract: Background: Hydrocele is an abnormal collection of serous fluid in the tunica vaginalis. The most common form of hydrocele in adults is primary or idiopathic, affecting approximately 1% of adult men. Most patients receive surgical treatment. We report a case cured by intracapsular injection of polidocanol. Case summary: A 32-year-old man found a lump in his left scrotum while taking a bath. He conducted a transillumination test himself, and the result was positive. Hydrocele of the testis was then diagnosed by ultrasound examination. The patient underwent several rounds of hydrops aspiration, intracapsular drug injection, and oral antibiotic treatment, but all failed. Finally, the hydrocele was cured by injection of polidocanol into the capsule. Conclusion: Simple hydrocele aspiration and intracapsular injection of anti-inflammatory drugs had no obvious therapeutic effect. Intracapsular injection of polidocanol has a reliable and lasting therapeutic effect on hydroceles with the advantages of procedure simplicity, low cost, rapid recovery, and few side effects.

Keywords: Hydrocele, polidocanol, intracapsular injection

Introduction

Hydroceles are abnormal collections of fluid between the parietal and visceral layers of the tunica vaginalis. They are the most common cause of painless scrotal swelling. The standard of care for hydroceles has traditionally been surgical excision or repair under general anesthesia. There have been multiple reports of successful treatment with aspiration and sclerotherapy, including with talc [1], phenol [2], polidocanol [3], doxycycline [4], tetracycline [5], sodium tetradecyl sulfate [6], and alcohol (from a single study) [7]. We report a case of a hydrocele cured by self-injection of a sclerosing agent. The patient performed puncture and aspiration, intracapsular injection of gentamicin and dexamethasone, and oral administration of antibiotics, all of which failed to cure the hydrocele. The patient was finally cured by an intracapsular injection of polidocanol.

Case report

A 32-year-old male found swelling-without tenderness but with a certain pressure-in his left scrotum when taking a bath. A transillumination test showed positive results. Later, with the help of colleagues, a testicular hydrocele of approximately 20 ml was diagnosed by ultrasound (**Figure 1A**). The hydrocele in the tunica vaginalis did not grow in the 6 months after diagnosis. However, there were symptoms of scrotal swelling. To avoid the trauma and inconvenience of an operation, the patient planned to treat himself. First, under illumination, he used a 20-ml syringe with a 5-ml syringe needle to aspirate the hydrocele. The patient used iodophor for disinfection and did not use any narcotic drugs in the process. Approximately 22 ml of clear, light yellow liquid was aspirated. Unfortunately, 1 week later, the hydrocele recovered to its previous size. Over the next 6 months, the patient performed repeated, intermittent aspirations, but the hydrocele was not cured. Considering the inefficacy of simple puncture aspiration, the patient injected 5 mg dexamethasone and 40,000 units of gentamicin into the sheath after aspiration. This method slowed the recurrence rate of the hydrocele, but it still recovered after 2 weeks. To further

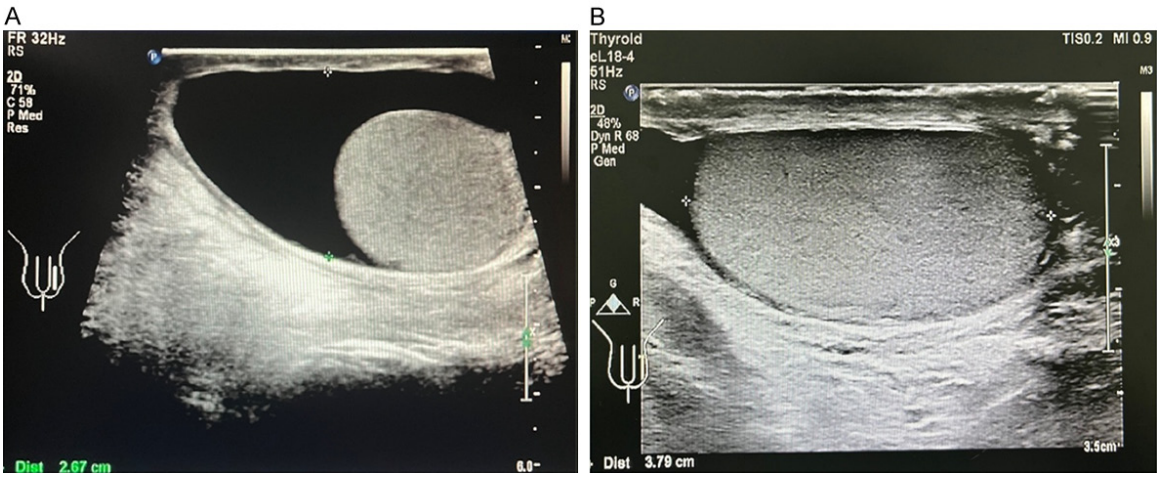

Figure 1. Ultrasonic manifestations of scrotum before and after sclerotherapy. A. Before sclerotherapy, a hydrocele was diagnosed by ultrasound. Most of the hydrocele existed above the testicles, with a total volume of approximately 20-30 ml. No lesions were found in the testicles or epididymis. B. After 1 year of treatment, ultrasound showed a small-volume hydrocele around the testicles. No abnormalities were found in the testis or epididymis.

Table 1. Routine semen test results

Code	Item name	Results	Reference intervals	Units
1	Volume	3.5	≥1.5	ml
2	Liquefaction time	<30	<60	min
3	pH	7.3	≥7.2	--
4	Sperm concentration	19	≥15	$\times 10^6$/ml
5	Forward motility sperm	41	≥32	%
6	Total sperm motility	48	≥40	%
7	Sperm agglutination	No	No	--
8	Sperm survival rate	82	≥58	%
9	Normal morphology rate of sperm	4	≥4	%

Note: Semen was obtained by masturbation after 1 year of sclerotherapy and 5 days of abstinence.

strengthen the anti-inflammatory treatment, the patient was given oral levofloxacin 0.2 g BID with dexamethasone and gentamicin injections. After several attempts, it was confirmed that intracapsular injection of dexamethasone and gentamicin was ineffective for treating the hydrocele. Finally, polidocanol was selected to treat the hydrocele. The method was similar to that described above. After draining the hydrocele (approx. 20 ml), the needle was not removed. The syringe was replaced with a syringe with pre-extracted polidocanol (5 ml polidocanol). The original plan was to inject 5 ml of polidocanol, but the injection caused severe pain, so the patient was forced to stop after injecting only 3 ml. Pain in the left scrotum and groin forced the patient to stay in bed. After approximately 1 hour, the pain gradually subsided, and the patient could move freely. After 6 hours, the pain completely disappeared. It has now been 1 year since sclerotherapy and the patient has experienced no hydrocele recurrence or induration in the left scrotum. A recent ultrasound examination showed a small hydrocele in the left tunica vaginalis cavity, but the testicular morphology and structure were normal (**Figure 1B**). The quality of the patient's semen was not affected (**Table 1**). All operations were done by the patient himself.

Discussion

A testicular hydrocele is a common, benign disease [8]. The most common form of hydrocele in adults is primary or idiopathic, affecting approximately 1% of adult men [9]. Most hydroceles do not require surgical treatment, but large hydroceles may cause some bothersome symptoms. Several surgical techniques have been proposed to treat this condition; however, surgical treatment comes at a high cost and can cause great trauma and many complications. Sclerotherapy has also been widely performed with several agents, offering an excel-

lent treatment option for idiopathic hydroceles compared with traditional operations [10]. This case details the self-treatment process of a hydrocele patient, illustrating that simple aspiration of effusion and intracapsular injection of anti-inflammatory drugs have no therapeutic effect on a hydrocele. By contrast, the therapeutic effect of polidocanol was very satisfactory. According to previous reports, sclerotherapy fuses the visceral and parietal layers of the tunica vaginalis, obliterating the potential space for recurrence of the hydrocele [2, 6, 11]. However, an ultrasonic examination of this patient showed this fusing did not occur after treatment with the sclerosing agent; although no additional liquid was produced in the vaginal cavity, a small amount of liquid remained there. It may be that the sclerosing agent destroys the secretion function of the mucosa instead of promoting fusion of the mucosa.

Due to the pain caused by the intracapsular injection of the sclerosing agent, the dosage of the sclerosing agent was reduced. Nevertheless, the agent offered effective treatment. Adding a proper amount of lidocaine to the sclerosing agent may reduce the pain experienced during treatment. Moreover, this treatment did not influence the morphology or structure of the testis or the quality of the patient's semen.

Although sclerotherapy for hydroceles is convenient, more accurate condition evaluation (for example, the amount, cause and type of hydroceles) and treatment standards are necessary. Importantly, communicating hydroceles should not be treated with this method. The patient's age and the etiology and volume of the hydrocele should be considered before sclerotherapy. The relationship between drug dosage and the cure rate and complications also needs further study.

Conclusion

This case shows that simple puncture aspiration and intracapsular injection of anti-inflammatory drugs had no therapeutic effect on a hydrocele, whereas intracapsular injection of polidocanol was an effective treatment. Compared with surgical treatment, intracapsular injection of polidocanol has the advantage of resulting in less trauma, lower costs, fewer complications, and no need for hospitalization or anesthesia. Furthermore, people with certain medical experience may be able to self-treat.

Disclosure of conflict of interest

None.

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