

Treating swollen scrotum: Sclerotherapy of Hydrocele and Spermatocele, using Doxycycline®

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Abstract: To evaluate the efficacy of doxycycline as a sclerotherapy agent for the treatment of hydrocele/spermatocele. Fifty-four men, with symptomatic hydrocele/spermatocele were treated with aspiration and sclerotherapy using doxycycline. Mean duration of pre-treatment symptoms was 34 months. The mean volume of aspirates was 203 ml. The doxycycline was dispersed in saline (27 cases) or in a solution containing local anaesthetics (25 cases). Where necessary, sclerotherapy was repeated up to four times. The long term results were evaluated using a questionnaire, telephone interviews and clinical examination in selected cases. Forty one cases were treated only once, with an over all success rate of 92%, and only two patients underwent surgery after the first round of sclerotherapy. Pain reaction was the most common complication, which was minimal in the group receiving doxycycline mixed with local anaesthetics. Sclerotherapy of hydrocele/spermatocele using doxycycline is effective and has a high success rate with relatively few complications.

Keywords: doxycycline, sclerotherapy, hydrocele, spermatocele

Introduction

A hydrocele is an abnormal collection of fluid between the parietal and visceral layers of the tunica vaginalis. The lymphatic plexus of the parietal tunica vaginalis is responsible for the resorption of fluid formed by the tunica vaginalis [1]. Accordingly, it may be concluded that in case of hydrocele damage to the lymphatics have taken place. The surgical treatment of hydrocele has been described through the centuries as palliative and radical [2]. Since the 13th century, sclerotherapy has been performed by instillation of different substances, including ethanolamine oleate, tetracycline, polidocanol, sodium tetradecyl sulfate and phenol [6-10]. The current study evaluates the efficacy of sclerotherapy with doxycycline as a method of treatment.

Patients and Methods

Our study is a retrospective comparative study and includes 54 patients, mean age 68 y (range 35-89) with hydrocele or spermatocele (3 patients with bilateral hydrocele). The patients were treated between 1985-1998 and had symptomatic scrotal swelling for a mean duration of 34 months

(range 1-120). The patients major complaints included pain and scrotal swelling. The pain was occasional in 19 patients, and constant in 4. Twenty-five patients had no pain. In twenty cases the swelling was considered by the patient to be a major problem and in 10 patients a moderate problem. Seventeen patients considered the swelling as a minor problem.

The diagnosis was made on clinical examination, using torch transillumination. In four patients ultrasonography was used. Patients with extra scrotal pathology, other than hydrocele and spermatocele, were excluded from the study.

Treatment was performed by the insertion of an 18-gauge intra venous cannula through the scrotal wall on the cranial part of the hydrocele. The intracannular needle was removed and the fluid aspirated completely through the plastic sheath, which was left in the sac for instillation of the sclerosing agent. The evacuated fluid volume ranged from 30 to 1000 ml (mean 203 ml). We used doxycycline (Vibramycin, doxycycline®, Pfizer, USA), at a dosage of between 100-200 mg (depending on hydrocele volume) in a 10 ml solution. The solution was saline in 27 cases and a combination of 5 ml lignocain (Xylocain®, Astra, Sweden) and 5 ml bupivacain (Marcain®, Astra, Sweden) in 25 cases.

Results:

The patients were re-examined 10-90 days (Mean of 82 days) after the first treatment and in cases of recurrence retreated after another three months. Treatment was repeated up to 4 times (range 1-7 times). The mean follow up time was 4.9 years (range 1-9). The final evaluations were accomplished in 1998 using a questionnaire, telephone interviews and, in selected cases, completed by physical examination. Six patients could not be reached (5 patients were dead of unrelated disease). In the questionnaire the patients evaluated their satisfaction, the simplicity of the treatment and also acknowledged eventual recurrence and the adverse effects of the treatment (such as pain and allergic reaction). Pain reaction measured in a four grade scale (no, minor, moderate and sever pain).

Forty-one patients were treated only once, 35 patients were cured, 4 patients had a small recurrence, which didn't require further treatment, and two patients were operated on after the first treatment (Figure 1). Sixteen cases were re-injected 2-4 additional times. Of these, 11 were cured, 3 were operated on and 2 had minor recurrence that did not require treatment. Of a total 92% success ratio, 81% were totally cured, and 11% had minor recurrence which didn't require any treatment (Figure 2). Of the 6 cases with recurrence after prior surgery, 4 were cured and 2 had minor recurrences. Fifty-one patients answered the questionnaire and 46 were satisfied. Three patients were not satisfied (one because of pain reaction and two because of recurrence) and two were doubtful with the treatments result because of recurrence (4 of them were operated on). In total, 52 cases (91.2%) were asymptomatic after treatment, 46 (80.7%) completely

cured and 6 (10.5%) with minor recurrence. 91% of the patients considered the treatment to be simple to go through. Six cases were unwilling to be treated again in case of recurrence in the future.

Complications

Pain reaction was the most common complication and there was one case of liquefied haematoma, three months after treatment. In most cases the pain was treated by diclofenac (intra muscular injection) and in some cases with ketobemidon (intravenous injection). Compared with the group treated with doxycycline in lignocain, the group treated with the same drug in saline suffered a higher frequency of severe or moderately severe pain. In the latter group 12 patients (44%) had sever pain, 7 patients (26%) had moderate pain, 3 patients (11%) had minor pain a few hours after sclerotherapy and 5 patients (19%) had no pain at all. The pain reaction was obviously reduced by using local anaesthetics, 16% had severe pain, 16% moderate, 41% minor and 19% no pain (Figure 3).

Discussion

Sclerotherapy of hydro/spermatocoele using doxycycline is effective and simple and can be performed on an out patient basis. In our study the success rate of the procedure was 92%, which is comparable to other successful sclerotherapy approaches using other materials. A study using sodium tetradecyl sulphate as sclerosant reports 88% success rate, but 1.9% (2 cases) experienced serious complications leading to orchidectomy [9]. Studies reporting the outcome using 2.5% phenol, reports a 91% cure rate and 3% mild short-term complications, including infection which required antibiotic treatment and testicular tenderness 4% [10]. Unlike sclerotherapy, surgery is associated with a high morbidity rate with at least 17% haematoma and 10% sepsis [3]. The average hospital stay following surgery is five days, while the sclerotherapy is done on outpatient basis. The aspiration and sclerotherapy technique appears to be effective, safe and cost-effective treatment modality [4]. The long-term antifertility effect of sclerotherapy is still unclear and the method is not recommended for treatment of young males [11]. Localised gangrene of the scrotum and penis has been reported as a complication to tetracycline sclerotherapy caused by direct injection of sclerosant into a branch of external pudendal artery after aspiration [12]. In our study, no such incidence was encountered.

In conclusion, sclerotherapy of Hydrocele/spermatocoele with doxycyclin is an effective and simple alternative to surgery with a high success rate and relatively few complications. Using lignocain and bupivacain combination reduced the pain reaction.

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Figures:

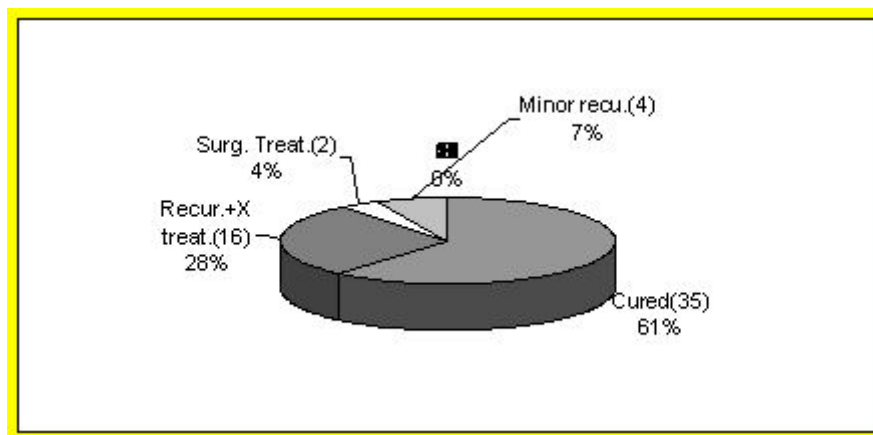


Fig. 1 : Result after first doxycycline sclerotherapy treatment: 61% cured, 7% minor recurrence, 28% recurrence plus retreatment, and 4% surgical treatment.

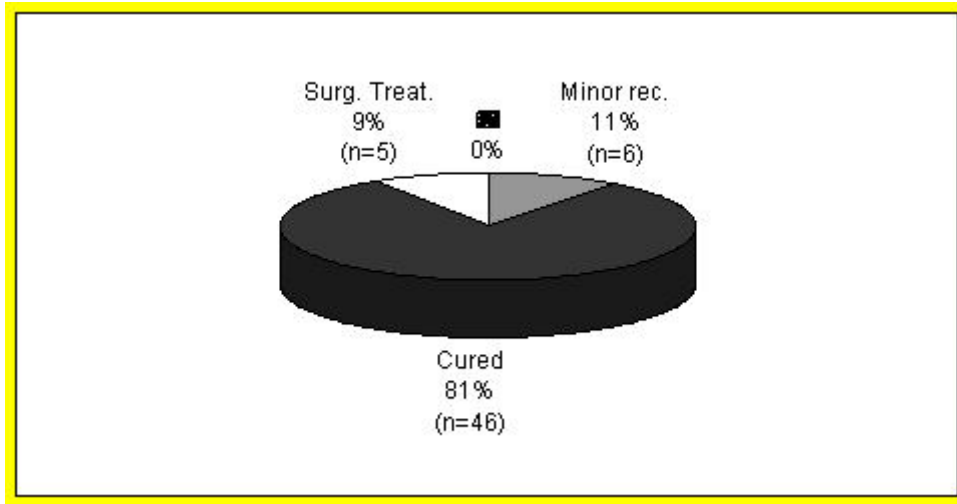


Fig. 2 : Final result of doxycycline sclerotherapy: 81% cured, 11% minor recurrence, 9% surgical treatment

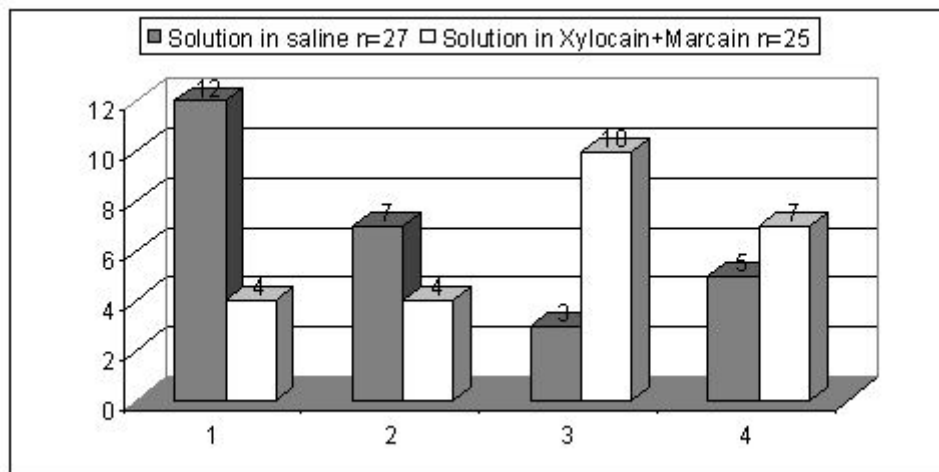


Fig. 3: Pain reaction following doxycycline sclerotherapy in the presence or absence of local anaesthetic (Xylocain + Marcain): 1=Severe, 2=Moderate, 3=Minor, 4=No pain.