Brief Communication

Minimally Invasive Surgery and the Use of Foreign Body Forceps to Reduce Steatocystoma Multiplex Scars

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ABSTRACT

Background: Steatocystoma is a benign cystic lesion. Steatocystoma multiplex presents as multiple lesions that occur frequently on the axilla, chest and upper limbs. Cyst removal as treatment is fundamental; methods include simple excision, puncture aspiration, punch biopsy excision and CO₂ laser. However, this is difficult due to the widespread lesions of steatocystoma multiplex. We have devised a new treatment approach for steatocystoma multiplex, which involves minimally invasive incisions and the use of foreign body forceps.

Method: We first made an incision of approximately 1 mm with a scalpel. While extruding the contents, foreign body forceps were advanced to grasp the inner wall of the cyst capsule. The cyst wall was peeled off from its surroundings and was removed as a lump. This was repeated for each of the cysts presented.

Result: The excision time per cyst was approximately 1 minute. Since no sutures were required, 20-30 excisions could be made in a single setting within 30 minutes. The wound was hardly conspicuous.

Consideration: Steatocystoma multiplex often causes stress to patients in terms of aesthetics, resulting in the desire to be treated. We think that this method of using foreign body forceps on minimal incisions is an optimal surgical technique because it is simple, with short operation time and reduced patient burden.

Key words : Steatocystoma, foreign body forceps, minimally invasive

Background

Steatocystoma is a benign cystic lesion that is palpable as a hard mass raised subcutaneously, with a skin-colored to light yellowish or bluish hemisphere. They may present as a single lesion (steatocystoma simplex) or multiple lesions (steatocystoma multiplex). Steatocystoma multiplex lesions are 1 to 10 mm in size that occur frequently on the axilla, chest, and upper limbs. Cases of autosomal dominant inheritance suggest the involvement of mutations in the KRT17 gene.

On histopathologic examination, the cyst wall is composed of several layers of epithelial components, with flattened sebaceous glands found within or nearby. As steatocystomas do not disappear naturally, cyst removal is fundamental as treatment; methods include simple excision, puncture aspiration, punch biopsy excision, and CO₂ laser. There is no

particular difficulty with either treatment methods. However, steatocystomas are characterized by multiple cysts and frequent recurrences. For this reason, it is necessary to devise a treatment that is feasible for widespread cysts, is time-saving, and has low risk of scarring and low recurrence rate. We report our treatment method using foreign body forceps on minimal incisions for steatocystoma multiplex.

Method

For patients who presented with multiple masses, we first removed the cyst capsule with Trepan and submitted it for histopathological examination to achieve a definitive diagnosis of steatocystoma. After a confirmed diagnosis, the excision treatment was performed on each cyst (Fig. 1). After injecting a small amount of local anesthesia using a 30G needle, an incision of approximately 1 mm was made with a #11 scalpel

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Fig. 1. Multiple lesions of steatocystoma multiplex.

blade (Fig. 2 and 3). While extruding the pale-yellow oily contents, foreign body forceps were advanced to grasp the inner wall of the cyst capsule (Fig. 2 and 4). The gripped inner wall was peeled off from its surroundings by gently pulling from left to right, enabling the cyst wall to be removed as a lump. As a result, the cyst could be easily excised without making a large incision (Fig. 5).

Result

The excision time per cyst was about 1 minute. After the resection, only ointment treatment was performed, no suture was required, and 20–30 excisions could be made in one setting within 30 minutes. Showering and bathing were possible from the next day onward, hence reducing patient burden. Furthermore, patient satisfaction was high, since the wound was hardly conspicuous.

We retrospectively reviewed the cases from 2012 to 2019. There were only 3 patients (37-year-old and 28-year-old men, and a 40-year-old woman) who required multiple sessions – five, three, and six times, respectively. All of them had no recurrences, although new lesions appeared elsewhere every year. Most of the cysts were removed easily. However, new incisions were needed for some because the 1 mm incisions did not expose the cyst well, causing surrounding tissues to be grasped together by the foreign body forceps.

Consideration

Steatocystoma multiplex tend to cause distress to patients due to aesthetic reasons, resulting in the desire to be treated. Surgical treatment is difficult due to the widespread lesions. There is no established treatment for steatocystoma. Since the frequency of the disease itself is not high, each facility has its own methods. Based on case reports, these treatments include CO₂ laser, Trepan, simple excision, and methods using picks¹⁻⁶⁾. With respect to the puncture suction method, clogging is likely to occur due to keratin and soft hair, hence reducing the

Fig. 2. Foreign body forceps and a #11 scalpel blade.

Fig. 3. Hold the lesion in place and make an incision of about 1 mm with the #11 blade.

reliability of this approach. The cyst wall also tends to remain, resulting in a high risk of recurrence. Freezing and coagulation can leave pigmentations and scarring, which may be a disadvantage in terms of aesthetics. There are, however, reports of good results obtained from surgical excision by CO₂ laser and microincisions (Table 1). We therefore think that minimal incisions with the use of foreign body forceps is an optimal surgical technique because it is simple, with short operation time and reduced patient burden.

This procedure is possible because the cyst tightly adheres to its capsule wall. The procedure itself is not much different from the methods introduced by Adams et al.⁴⁾, Kaya et al.⁷⁾, Schmook et al.⁸⁾, and Keefe et al.⁹⁾. The novelty of our approach lies in the use of foreign body forceps. The authors have tried various tools. For example, the #5 micro-forceps were used but they penetrated the cyst wall and grasped onto underlying tissues, while the Adson forceps grasped onto tissues surrounding the capsule. Both of these made cyst extraction with minimal damage to surrounding structures difficult. An advantage of using foreign body forceps is that the tip is pointed, which allowed firm grasp of only the inner surface of the capsule wall. The triangular shaped tip also allowed for easy access through the passage leading up to the cyst. Furthermore, the gripping force is concentrated on the distal end of the tip, making it easier to remove the cyst with precision. In addition, foreign body forceps are commercially available and are inexpensive. Minimal incision using foreign

Fig. 4. While extruding the contents, the inner surface of the cyst wall is gripped and gently peeled off with foreign body forceps, allowing removal of the lump.

Fig. 5. One week after the operation.
a: Antecubital fossa
b: Axilla

Table1. Comparison of treatment methods for steatocystoma multiplex

Method	Advantages	Disadvantages
Puncture suction	Simple and easy	Risk of clogging and recurrence
Freezing and coagulation	Simple and easy	Pigmentation and scarring
CO ₂ laser	Simple and easy, no pigmentation and less scarring	Equipment is costly
Small incision surgical resection	Simple, no pigmentation	Linear scarring, time-consuming
Foreign body forceps on Minimal incision	Simple and easy, no pigmentation, less scarring, feasible for multiple excisions in one setting	None

body forceps can therefore be performed immediately.

Conclusion

Treatment of steatocystoma multiplex causes patient burden. Through our devised method, up to 30 excisions could be easily performed in a single outpatient setting. Since no suturing was required and only ointment application was needed, patient burden was low. We therefore conclude that using minimally invasive incisions with the use of foreign body forceps is the optimal treatment for steatocystoma multiplex.

Conflicts of interest

None.

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