

Treatment of Auricular Hematoma Using Dental Rolls Splints

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ABSTRACT

Objective: To introduce an effective and simple technique for treatment of auricular hematoma by using dental rolls as a compressive method, to prevent recurrence.

Methods: A total of 45 patients with auricular hematoma presented to ENT clinic during four years in four Jordanian military hospitals. Sixteen patients have been treated by simple needle aspiration followed by compressive dressing. Eighteen patients have been treated by incision and drainage, followed by compressive dressing. Eleven patients have been treated by incision and drainage followed by suturing the auricle between two dental rolls. Chi-Square test was used for statistical analysis.

Results: Of these 45 patients, 11 patients had recurrence of the hematoma: 6 patients (37.5%) from those treated by aspiration and pressure dressing. 4 patients (22.2%) from those treated by incision, drainage and pressure dressing. And 1 patient (9.1%) from those treated by incision, drainage followed by suturing the auricle between 2 dental rolls.

Conclusion: Incision and drainage followed by suturing two dental rolls as a compressive technique, appears to be a simple, well tolerated and excellent method in treatment and preventing re-accumulation of auricular hematoma, and to avoid ear deformity (cauliflower ear).

Key words: Auricular, Cauliflower ear, Compression, Drainage, Hematoma.

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Introduction

Auricular hematoma is commonly associated with injuries from direct trauma, particularly in contact sports, such as rugby, wrestling or boxing.⁽¹⁾ It can occur spontaneously.⁽²⁾ or in hypertensive patients due to degenerative changes in fibrous wall of blood vessels.⁽³⁾ It occurs on the anterior aspect of the pinna where the skin is adherent to the cartilage and there is a lack of subcutaneous tissues.⁽⁴⁾ then extravasations of blood between the perichondrium and the cartilage of the pinna occurs.⁽²⁾

If auricular hematoma is not treated properly, it can progress to abscess formation, chronic scarring and subsequent disfigurement of the auricle.^(5,6) cauliflower ear, development of fibrocartilagenous material due to a stimulation mesenchymal cells in the perichondrium to produce a new cartilage.⁽⁷⁾

The proper management is aimed at restoring normal appearance of the ear. This can only be achieved if perichondritis and re-accumulation of the hematoma are avoided.^(8,9)

Auricular hematoma treated by simple needle aspiration without compression is ineffective.⁽¹⁰⁾ because it results in recurrence of the hematoma.⁽¹¹⁾

During the second half of 20th century, different treatments were developed, included various hematoma drainage techniques with special bandages to prevent hematoma recurrence and ensuring progression to cauliflower ear.⁽¹²⁾

Several methods have been used as a compression techniques: plaster mould, thermoplastic splint.⁽¹³⁾ cotton wool bolster casts.⁽¹⁴⁾ Leonard buttons.⁽⁶⁾ hearing mould splint.⁽⁴⁾ dental silicone material.⁽¹¹⁾ and silicone rubber splint.⁽⁸⁾

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Fig. 1. Pictures of a patient managed by dental rolls splints after incision & drainage

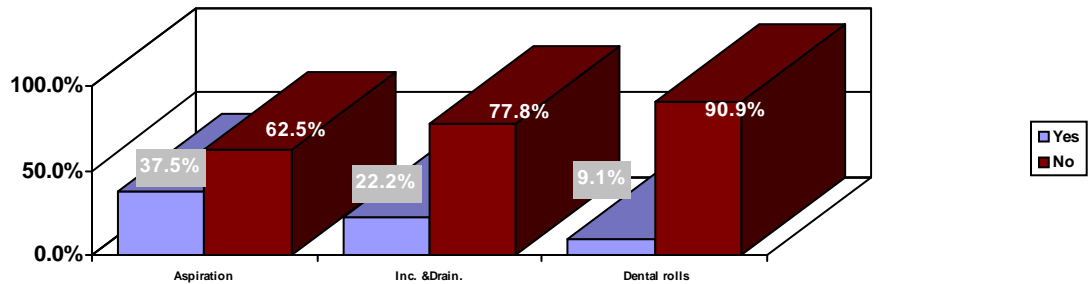


Fig. 2. Bar chart showing the results of treatment options. (Yes= recurrence, No= no recurrence)



Fig. 3. The results of treatment of auricular hematoma using dental rolls, same patient as in Fig. 1, Seven days after the treatment showing good cosmetic result

The aim of our study is to introduce a simple compressive method for effective treatment of auricular hematoma, and also to evaluate the effectiveness of other methods.

Methods

The study included 45 patients with auricular hematoma who were seen in to ENT clinics in four Jordanian Military Hospitals, Al-Hussein Hospital (KHMC), Prince Rashid Bin AL-Hassan Hospital, Queen Alia Military Hospital and Prince Zeid Bin Al-Hussein Hospital, during the period from July 2005 to June 2009. The age of the patients ranged from 5 to 41 years old (average 19.3 years), 37 males and 8 females. The patients were treated

randomly by three methods: Sixteen patients were treated by simple needle aspiration followed by compressing pressure dressing. Eighteen patients were treated by incision and drainage followed by compressing pressure dressing. Eleven patients were treated by incision and drainage followed by suturing the auricle between two dental rolls. Fig. 1

All of the patients were given oral antibiotic (Cephalexin), and they were given an appointment after 7 days to be checked.

Results

The dressings and the sutured dental rolls were removed 7 days post treatments and the patients were checked.

Recurrence of hematoma had occurred in:

- 6 patients (37.5%) who were treated by needle aspiration followed by compressing pressure dressings.
- 4 patients (22.2%) who were treated by incision and drainage followed by compressing pressure dressings.
- 1 patient (9.1%) who was treated by incision and drainage followed by suturing the auricle between the two dental rolls. Fig. 2

Several methods for treatment of auricular hematoma and prevention of recurrence have been documented. Statistical analysis of three methods of treatment in hematoma recurrence showed no statistical significant (P value = 0.231).

Chi-Square test was used for statistical analysis and showed no statistical significant (P value = 0.231). In spite of this insignificant value between the three methods of treatment in hematoma recurrence, this could be due to the small number of the study group.

Discussion

Auricular hematoma should be treated properly to avoid its sequel, the cauliflower ear.

The goals of treatments are to drain the hematoma and to prevent recurrence of the fluid.

Many different techniques have been tried, simple needle aspiration is uniformly unsuccessful.⁽⁸⁾ and in addition, repeated aspirations are more likely to introduce infection leading to perichondritis, cartilage necrosis and deformity. So, simple needle aspiration without any compression is not adequate for preventing recurrence.⁽¹⁰⁾

Re-accumulation rates are reduced if the aspiration is combined with application of external pressure. Various techniques of pressure dressings have been used, including leonards buttons,⁽⁶⁾ thermoplastic splint,⁽¹¹⁾ silicone ear splints,^(2,4) and mattress sutures.^(5,15,16)

James M. Henderson described a technique that uses a rigid thermoplastic splints that moulds to the contours of the ear, allows adequate pressure over a broad area.⁽¹¹⁾

Nobuo Ohta tried intralesional therapy with OK-432 (which is used for treatment of cystic hygroma) on 16 patients. Almost half of the patients had local pain at site of injection and fever.⁽¹⁷⁾

Several researches suggested a running mattress suture using absorbable catgut for complete elimination of the dead space after complete

evacuation of the hematoma by suction or skin incision.^(5,16)

Other researchers used different methods to apply pressure like dressing, splinting devices, a buttons,⁽⁶⁾ silicone ear putty.^(2,4,8,15) and others invented a special mould device.⁽¹⁸⁾ for treatment and prevention of recurrence of the hematoma.

Bull PD & Lancer described a method of treatment under general anaesthesia involving an incision made on the posterior aspect of the pinna and 5mm disc of cartilage excised, and after evacuation of the hematoma a Radivac suction drain then inserted.⁽³⁾

Koopman & Coulthard described a method similar to our method, includes aspiration of the hematoma with a large bore needle, sterile dental rolls impregnated in bacitracin ointment are moulded over the auricle both anteriorly and posteriorly in the area of the hematoma and sutured in place with silk.⁽¹⁹⁾

Some researches failed to define a clear treatment for acute auricular hematoma, either the optimal management strategy or post-drainage intervention (such as splinting or bandaging) is necessary.⁽²⁰⁾

Like most procedures involve the drainage of the hematoma with a subsequent application of a contoured pressure dressing; Our method using dental rolls for compression is simple, effective and with excellent cosmetic ear appearance. Fig. 3

Conclusion

Incision and drainage followed by suturing two dental rolls as a compressive technique, appears to be a simple, well tolerated and excellent method in treatment and preventing re-accumulation of auricular hematoma, and to avoid ear deformity (cauliflower ear).

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