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Case Report

Relaxed skin tension lines and epidermal inclusion cyst: case report

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ABSTRACT

Facial cosmesis is the primary concern, whatsoever maybe the lesion, benign or malignant. The subject wishes that the facial features be retained and the surgeon, that his handiwork is appreciated. Utilising the relaxed skin tension lines and the wrinkle creases one, can usually achieve an obnoxious scar free face. Such an intervention was undertaken in an individual with an indwelling inclusion cyst in the naso-maxillary groove.

Keywords: Epidermal inclusion cyst, Epidermoid, Relaxation skin tension lines

INTRODUCTION

Epidermoid inclusion cysts are benign lesions that tend to occur at areas of embryonic fusion. they are characterized histologically by cystic spaces lined by simple squamous epithelium (epidermoid cyst), containing skin adnexa (true dermoid cyst) or tissues of all three germ layers, like muscle, teeth, bone, cartilage etc. (teratoid cyst).[1,2] Cystic masses in the head and neck region are common presentations in the otorhinolaryngology clinics, and epidermoid cysts in the form of cutaneous lesions occur frequently on the face, scalp, neck and the trunk.[3] Diagnosis is by clinical examination fine needle aspiration cytology (FNAC) and treatment by excision of the cyst.

The facial skin incisions perpendicular to the relaxation skin tension lines (RSTL) heal with broad, unsightly scars and incisions or excisions in RSTL with fine, imperceptible scars.

Therefore, a clear knowledge of the relaxed skin tension lines on the face is vital, to achieve optimal cosmetic outcome.

We report a case of epidermal inclusion cyst along the nasomaxillary groove in 31-year-old male patient.

CASE REPORT

A 31-year healthy individual presented with a subcutaneous 1×1 cm, freely mobile, smooth mass in the naso maxillary region. The overlying skin was smooth and could be rolled over the mass and the latter was free from the underlying musculature. A fine needle aspiration initially lead to collapse of the mass, with a minimal viscous aspirate reported as epidermal inclusion cyst. The near flattened naso maxillary groove sequel to this intervention, gave a false sense of relief to the subject and a deterrent to surgical intervention, which was a tentative "endoscopic sub -labial access and delivery". Subsequent collection in the cyst with deliberate digital massage, led to infiltration in the overlying skin with marked erythema (Figure 1A). The latter did not subside with antibiotic and anti-inflammatory coverage, given over a period of one week. Therefore, he was taken up for surgical intervention, under general anaesthesia. The naso maxillary and naso labial groove was marked out (Figure 1B). An obliquely oriented crescentric incision site was

marked around the lesion, in the RSTL, taking care that the wound angle did not exceed 30 degree. The incision was given with the number 11 Bard Parker knife and deepened till the muscular layer (Figure 1C). The elliptical skin with the mass was resected in toto (Figure 1D). Haemostasis was maintained with bipolar diathermy. The adjoining skin was undermined circumferentially, to create advancement flaps, (Figure 1E) which were sutured with nylon 4-0 after approximation, in line with the RSTL. Mersilk was used in the subcutaneous layer thereby adding strength to the repair.

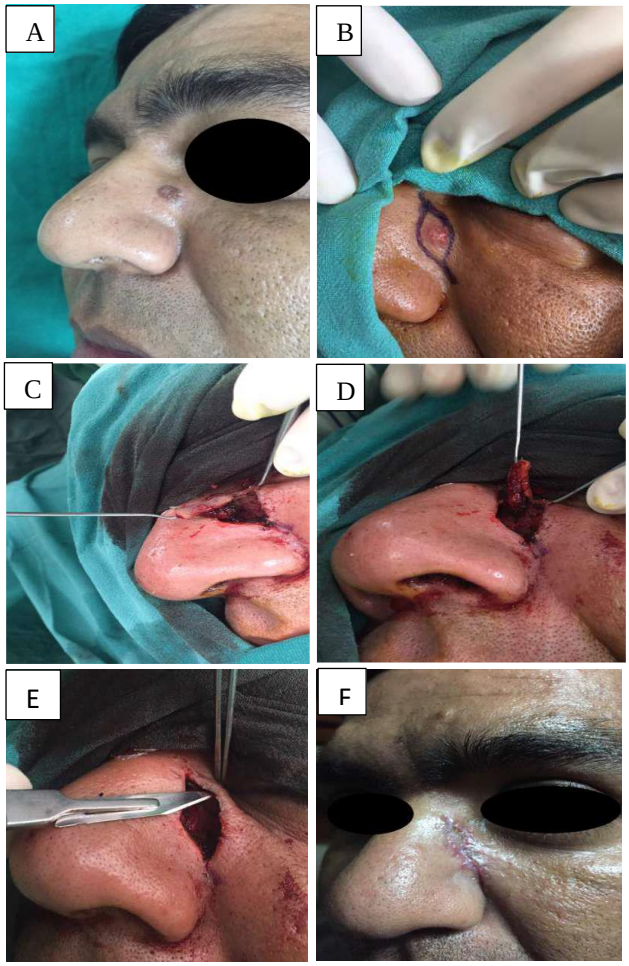

Figure 1: (A) 1×1 cm hyperpigmented cystic lesion in the left nasomaxillary groove, (B) marking showing the elliptical skin incision planned, (C) the skin incision deepened till the muscular layer, (D) cystic mass removed in toto along with skin, (E) undermining of the surrounding skin circumferentially to create advancement flaps, (F) Postoperative follow up picture of the surgical site with minimal scarring at 2 weeks.

Antiseptic dressing was carried out and he was discharged after overnight hospital stay. On post-operative follow up the surgical wound had healed well. Suture removal was done after 7th post-operative day. (Figure 1F).

DISCUSSION

Cystic masses are very common presentations in head and neck region, and epidermoid cysts are commonly seen in the face, scalp, neck and the trunk.[3] Epidermal inclusion cyst may be congenital or acquired. The congenital forms are due to trapping of ectodermal tissue in the lines of embryologic fusion.[4-6] Fusion of embryological lines takes place during 3rd to 5th week of gestation. Acquired cyst which are known as epidermal inclusion cyst, arise from inclusion of epidermal structures in the dermis and other deeper tissues after trauma.[5-7] Most accepted theory of etiopathogenesis is epithelial implantation theory.[4,7] According to this theory the epidermal elements are pushed into the deeper tissues leading to formation of a cyst. The trapped epidermis act like a skin graft, promoting keratin collection and thus forming a cyst.[4,5,7] Epidermal inclusion cyst that occur secondary to trauma, are mainly found in fingers, palms and soles.[4,5] The epidermal inclusion cysts are described as a dermal cystic enclosure of keratinizing squamous epithelium that is filled with keratin debris. Epidermal inclusion cyst can also occur in deeper tissue other than dermis, may be secondary to biopsy and surgery.[6] In our case there is no history of trauma. Clinically, the swelling is usually painless, slow growing and well circumscribed. On FNAC epidermoid inclusion cysts show squamous epithelial lined cysts filled with keratin debris. Cysts are treated by surgical excision. However, a proper understanding of skin tension vectors on face is crucial to incision design and cosmesis.

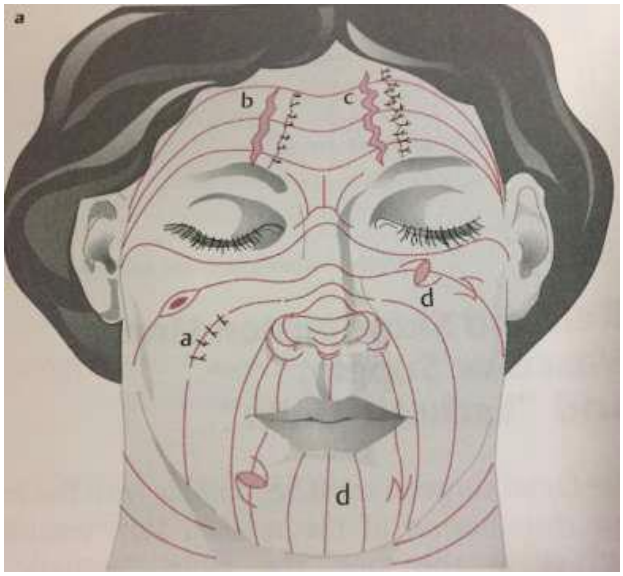

Figure 2: Relaxed skin tension lines with respect to various skin incisions (a-d).[10]

In 1984, Broges described simple method to determine the RSTL by pinching skin and observing the formed furrows and ridges rather than furrows formed by muscle contraction and joint mobilisation which might give false lines depending on degree and direction of mobilization

and muscle contraction. RSTL is a furrow created when the skin is pinched and relaxed in the absence of local tension.[8,9]

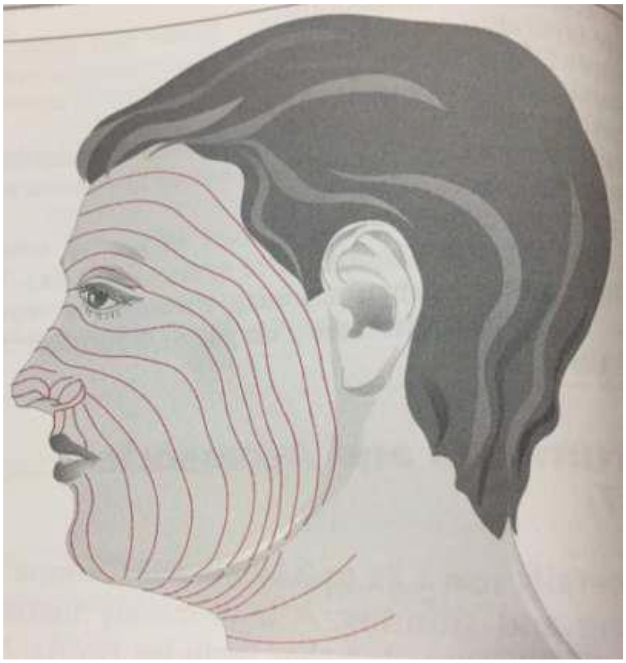

Figure 3: Depicting the location and direction of various relaxed skin tension lines over the face and neck.[10]

Clinically, the skin is maximally extensible perpendicular to RSTL, and this implies that the tension is minimized when incisions are created along RSTLs (Figure 2 and 3).[10]

The facial skin incisions perpendicular to the RSTL heal with broad, unsightly scars and incisions or excisions in RSTL heal with fine, imperceptible scars.

Therefore, a clear knowledge of the "relaxed skin tension lines" on the face is vital, to achieve excellent cosmetic outcome. Improper incision and tension across the wound lead hypertrophic scar formation.

CONCLUSION

Epidermal inclusion cysts are very common seen in the otorhinology clinic as benign lesions of the face. Treatment is by simple excision of the cyst. Proper anatomical knowledge about the skin tension lines is pertinent in order to achieve good cosmesis and scar approximation.

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REFERENCES

1. DePonte FS, Brunelli A, Marchetti E, Bottini DJ.Sublingual epidermoid cyst. J Craniofac Surg. 2002;13(2):308-10.
2. Meyer I. Dermoid cysts (dermoids) of the floor of the mouth. Oral Surg Oral Med Oral Pathol. 1955;8:1149-64.
3. Handa U, Kumar S, Mohan H. Aspiration cytology of epidermoid cyst of terminal phalanx. Diagn Cytopathol. 2002;26(4):266-7.
4. Acarturk TO, Stofman GM, post traumatic epidermal inclusion cyst Of deep infratemporal fossa. Annplast Surg. 2001;46(1)68-71.
5. Epstein WL. Epithelial cysts in buried human skin. Archdermatol. 1957;76:437-45.
6. Sullivan DP, Liberatore LA, April MM, Sasson J, Ward RF. Epidermal inclusion cyst: Sistrunk or not? Annot Otol Rhinol Larygol. 2001;110:340-4.
7. Uiku CH, Uyar Y, Kocaogullar Y, Avunduk MC. Iatrogenic epidermal inclusion of the parapharyngeal spaces: Unusual complication of ear surgery. Skull Base. 2004;14(1):47-51.
8. Borges AF. Relaxed skin tension lines (RSTL) versus other skin lines. Plast Reconstr Surg. 1984;73:144-50.
9. Borges AF. Relaxed skin tension lines. Dermatol Clin .1989;7:169-77.
10. Weerda H. Wound Management and Scar Revision: Reconstructive Facial Plastic Surgery: A problem solving manual: Second Edition: Thieme Publication; 2001: 5.

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