



ISSN Print: 2394-7489
ISSN Online: 2394-7497
IJADS 2018; 4(1): 164-168
© 2018 IJADS
www.oraljournal.com
Received: 15-11-2017
Accepted: 16-12-2017

Dr. C Swaminathan
B.D.S, M.D.S, Assistant
Professor, Department of Oral
and Maxillofacial Surgery,
JKK Nattraja Dental College,
Tamil Nadu, India

Dr. Mathew Jose
B.D.S, M.D.S, MOSRCS
(Edinburgh), Professor and Head
of Department, Department of
Oral and Maxillofacial Surgery,
Sree Mookambiga Institute of
Dental Science, Kanyakumari,
India

Dr. N Dhineksh Kumar
B.D.S, M.D.S, MOMSRCS
(Glasgow), Professor,
Department of Oral and
Maxillofacial Surgery,
Department of Oral and
Maxillofacial Surgery, Sree
Mookambiga Institute of Dental
Science, Kanyakumari, India

Dr. Sajesh
B.D.S, M.D.S, Professor,
Department of Oral and
Maxillofacial Surgery,
Department of Oral and
Maxillofacial Surgery, Sree
Mookambiga Institute of Dental
Science, Kanyakumari, India

Correspondence

Dr. C Swaminathan
B.D.S, M.D.S, Assistant
Professor, Department of Oral
and Maxillofacial Surgery,
JKK Nattraja Dental College,
Tamil Nadu, India

Surgical management of infected sebaceous cyst in cheek: A case report

**Dr. C Swaminathan, Dr. Mathew Jose, Dr. N Dhineksh Kumar and
Dr. Sajesh**

Abstract

The term sebaceous cyst is a term which denotes the subcutaneous cyst occurring due to obstruction of pilosebaceous ductal opening. The swelling is asymptomatic soft and cystic and fluctuant when not infected. The cyst is usually lined by an epithelium and filled with keratin, may also contain dermal appendages from the cystic wall. Histologically this cyst is considered to be an Epithelial cyst. The types of Epithelial cyst are Epidermoid cysts, pillar cysts, Dermoid cyst and steatocystoma. When the cystic lining contain only epidermis cyst is called as epidermoid cyst and when the cyst contain multiple dermal adnexa from the cystic wall, the cyst is called Dermoid cyst. The pillar cyst consist of epithelial lining without granular cell layer resembling the follicular epithelium containing mixture of keratin and lipids. The Steatocystoma are the true sebaceous cysts which consist of walls resemble the duct of sebaceous gland. The treatment modalities of these epidermal inclusion cysts are conventional elliptical excision, minimal excision, punch incision, application of solcoderm. Here we report a case of infected sebaceous cyst which was managed by conventional elliptical excision which resulted in hardly noticeable scar.

Keywords: Surgical management, infected sebaceous cyst, Dermoid cyst

Introduction

The sebaceous glands are spread out in the entire body surface area. The sebaceous cyst occurs due to the blockage of the duct of sebaceous gland predominantly occurring in the middle aged group. The other causes of sebaceous cyst are the developmental defect of the sebaceous duct and the traumatic implantation of the epithelium beneath the skin [1]. The predominant site of occurrence is the scalp followed by the face. Clinically a sebaceous cyst is an asymptomatic soft fluctuant swelling with the surface of the swelling containing a punctum [2]. Punctum is a black coloured (necrosed) part of the skin over the swelling which is attached to the underlying cyst. Once infected the cyst is painful firm in consistency and can undergo spontaneous rupture to discharge the content into the dermis which is difficult to retrieve and may lead to heavy scar [3].

Case report

A 45 year old male patient reported with the complaints swelling in the mid face region for the past 15 years which turned painful in last 2 weeks. Patient no previous medical history and neither the patient nor his family members had similar swelling elsewhere in the body. On inspection the swelling was round in shape and of 2cm in diameter extending anterior 2cm away from corner of the mouth and posteriorly 8cm anterior to the tragus of the ear. The skin over the swelling had central region of atrophy-a punctum like appearance (Figure 1).

On palpation the swelling had no warmth but tender, margins were well defined and consistency was firm and non pulsatile. On aspiration the swelling yielded white keratin like aspirate on cytology revealed inflammatory cells as shown in Figure 2, ultrasound picture of the swelling suggested it to be an infected sebaceous cyst. After thorough systemic examination the patient was prepared for surgical excision of the cystic lesion along with the involved layer of skin (Figure 3). Under local anesthesia infiltration and with aseptic precautions, incision was placed over the skin fixed to the cyst (Figure 4) and with great care dissection was done around the cyst without rupturing it. After all the margins of the cyst was free from the subcutaneous tissue the deep margin of the cyst was separated from the buccal

branch of facial nerve (Figure 5) (Figure 6 shows the excised specimen). After excision of the cyst the round defect (Figure 7) was converted to a linear wound by excision of dog ears superiorly and inferiorly. After achieving haemostasis the wound was closed in layers with 3-0 vicryl and subcutaneous 4-0 ethylone sutures (Figure 8). The post operative phase was uneventful and the wound healed with minimal scar tissue. The histopathological examination revealed it to be a dermoid cyst.



Fig 1: infected sebaceous cyst in right cheek with punctum



Fig 2: keratinous aspirate from the cyst



Fig 3: planned incision lines along with involved skin



Fig 4: incision placed and peripheral undermining done



Fig 5: dissection of cyst from subcutaneous bed protecting buccal branch of facial nerve



Fig 6: excised specimeny



Fig 7: defect sutured after excising dog ear



Fig 8: post operative wound healing with minimal scar

Discussion

Sebaceous cyst is a term used for clinical diagnosis. Histologically the sebaceous cyst is a type of epithelial cyst. The epithelial cysts are the lesions formed by invagination and cystic expansion epidermis of skin or the epithelium of hair follicle.

This epithelial cyst can be divided to many types based on the content of the cyst and the epithelial lining^[4].

- Epidermoid cyst
- Dermoid cysts
- Pillar cyst
- Steatocystoma

Epidermoid cyst is defined as a simple developmental or implantation cyst lined by epithelium. These are slow growing, firm to fluctuant predominantly occurring in head, neck, face, scrotum and face. The content of the cyst is laminated strands

of keratin, right to be called as keratin cyst^[5].

Dermoid cyst were considered to be developmental anomaly as they develop due to the entrapment of epithelium island during the embryonic midline closure region like auricular, nasal, sub lingual, sub mental and suprasternal regions^[6]. The dermoid of head have bone erosions and the surgical excision of these can cause intracranial communications. These dermoid are equally distributed in both male and female. These occur between the age group of 15 to 35 years. In 1883 Barker classified dermoid cysts into the following types

- Midline
 - Sublingual
 - Submental
- Lateral
 - Unilateral
 - Bilateral

The difference between the midline sublingual and submental dermoid is the location, submental dermoid occurs below geniohyoid and sublingual dermoid occurs above geniohyoid^[7]. Pillar cysts (isthmus catagen cysts) are cyst occurring from the outgrowth of external root sheath of hair, it occurs in the scalp and back and in hairy regions of the body. It occurs as solitary lesion in 30% and as multiple lesions in 70%^[8]. Clinically these cysts are devoid of punctum and present in elderly female the cyst is soft slow growing and fluctuant. Histologically they show features as trichilemmal keratinisation of the cystic epithelium that is keratinisation occurring without the granular layer of epidermis^[9]. The cystic lumen is filled with thick keratin and lipid substance. these cysts may have, mitotic figures, nuclear atypia and dyskeratotic cells. Immuno histo chemistry study reveals the presence of following cell cycle regulatory markers like p27Kip1, MMP9, LAT and BCL-10 It is believed that imbalance between dermal fibroblast and Matrix metalloproteinases leads to the cystic expansion^[9].

Steatocystoma are true sebaceous cyst in which the epithelium lining of the cyst is formed by the ductal walls of sebaceous glands. The content of the steatocystoma is the sebum the secretions of sebaceous glands. If it occurs as multiple lesion it is called steatocystoma multiplex. The clinical features are slow growing swelling with punctum, asymptomatic and when infected turn symptomatic and painful with inflammatory cystic contents^[10].

Multiple epithelial cysts occurring along with osteomas and intestinal polyps is a feature of Gardner's syndrome. The complications of long standing epithelial cysts are infection, developments of cocks peculiar tumor, cutaneous horns (compacted keratin) and squamous cell carcinoma^[11].

The Cock's peculiar tumor was described in 1852 by Cock for an ulceroproliferative change in pillar epithelial cyst^[12]. The histopathologic features of Cock's peculiar tumor are heavy inflammatory infiltrate in pilosebaceous proliferations, cellular atypia along with the presence of foreign body giant cells^[13]. The causative factors of Cock's peculiar tumor are the inflammation and trauma occurring to a pillar cyst. Though it resembles squamous cell carcinoma the treatment is conservative excision^[14].

Treatment of (sebaceous) epithelial cysts involves the following approach^[15].

- Conventional elliptical excision
- Zuber's minimal excision
- Punch incision

Conventional excision is done by a straight line incision over the cyst, when the overlying skin is not involved, an elliptical incision over the over cyst is used when the skin over the swelling is involved and the elliptical shape of incision can be extended transversely to include the skin attached to the cyst [16]. After adequate dissection without puncturing the cyst, margins of the cyst are exposed and freed from the attachments, the cyst is enucleated in toto and the closure of the wound is done in layers. Advantage of this technique is that the complete cystic lining is obtained for histopathological examination for rulling out any carcinomatous changes. The chances of cystic rupture and recurrence are less [17]. The recurrence rate of sebaceous cysts treated by conventional excision was 0.66% as reported by Klin and Ashkenazi [18].

Zuber minimal excision is a technique of excision of non inflamed epithelial cyst by which an stab incision 2-3mm is placed on the cyst and small haemostat is introduced in to cystic cavity to open the cystic contents. And thumb compressions are used to completely evacuate the cystic contents out of the cyst. Once all the cystic contents are evacuated the hemostat is used to hold the cystic lining along its base and entire capsule is gently elevated out through the small incision. Wound is rechecked for any presence of any remaining lining before giving a tight dressing on to the wound, closure of incision is not required. If the cystic contents are spilled out in to the dermis, it evokes a foreign body response and chance of recurrence is higher. If the cystic lining is thin, it breaks into pieces which become difficult to recover. As an empty cavity is created the chance of hematoma is more.

Punch incision technique is similar to Zuber minimal excision technique, except for the incision is made out of a tissue punch used for tissue biopsy. Once after the punch incision the haemostat is used to evacuate the content and squeeze out the capsule of the cyst through the punch incision [19]. The advantages of this techniques are less invasiveness, versatility, minimal bleeding, less scaring and reduced healing time. The defect packed with Silver impregnated membrane Poly M showed better cosmetic result than open wounds [20].

According to Lee at al, in a Randomised Controlled Trial comparing the elliptical excision and punch incision technique, operating time for cyst lesser than 2cm was less punch technique, while the operating time for cyst greater than 2cm was less in elliptical excision technique [21]. The punch incision technique produced a cosmetic scar. According to Mehrabi The recurrence rate of sebaceous cysts treated with punch incision technique was 3.6% [22].

Non surgical management like phenol injection or Solcoderm application was advocated by Ronnen M, Suster S and Klin B. After incising the cystic capsule they used socoderm (copper ions 15 p.p.m., oxalic acid 40 mg/ml, lactic acid 3 mg/ml, nitrate 410 mg/ ml and acetic acid 40 mg/ml) in to the cystic lining to fixate the cystic epithelium. This approach is used when the location of cyst is in unfavourable region for surgical excision. However inflamed sebaceous cyst requires aggressive surgical treatment to avoid recurrence [23].

Management of infected sebaceous cyst is debatable as the conventionally used two staged procedure of incision and drainage followed by surgical excision was followed until 1969 when Khafif RA and Attie JN performed the same in one stage procedure. Decompression of the abscess is done by stab incision in the apex of cyst followed by excision of the cyst under same field block [24]. Accordiong to Lookbill and Marks infection manifests without abscess formation it is

better to premedicate with antibiotics till the infection subsides and proceed with surgical excision. This treatment result achieved better primary healing than two staged procedure [25].

Conclusion

To summaries the term sebaceous cyst is used in clinical diagnosis, though histological diagnosis may vary. The sebaceous cysts less than 2cm is treated by minimal excision or punch incision methods and for the sebaceous cyst greater than 2cm conventional excision is used. When infected without abscess formation sebaceous cyst is treated by surgical excision under antibiotic coverage. If abscessed the sebaceous cyst is treated by incision drainage and excision as one stage procedure.

Reference

1. Townsend CM Jr., Beauchamp RD, Evers BM, Mattox KL. Sabiston Textbook of Surgery. 16th Ed. Philadelphia: Saunders, 2001.
2. Das SA. Textbook on surgical short cases, 2nd ed., Dr. S. Das at Calcutta, India, 2000, 4-6.
3. Das SA. Manual on clinical surgery, 5th ed., Dr. S. Das at calcutta, India, 2000, 42-43.
4. Bolpandi AK, Krishnappa P, Bennehalli A. Varied presentations of eoithelial cysts. International case reports and images, 2012; 3(10):65-67.
5. Kirkham N. Tumors and the cysts of the epidermis. In: Elder D, Elenitsas R, Jaworsky C *et al.*, editors. Histopathology of the skin, 8th edn. Philadelphia: Lippincott, 1994, 694-5.
6. New GB, Erich JB. Dermoid Cysts of the Head and Neck, Surg., Gynec. & Obst. 1937; 65:48-55.
7. Warren R, Cooper NC. Sublingual Dermoids, Lancet, 1930; 1:297.
8. Anolik R, Firoz B, Walters RF *et al.* Proliferating trichilemmal cyst with focal calcification. Dermatology Online J. 2008; 14:25.
9. McKee PH *et al.* eds. Cutaneous cysts. In: Pathology of the Skin with Clinical Correlations. 3rd ed. China: Mosby, 2005, 1670.
10. Murphy GF, Sellheyer K, Mihm MC. The skin. In: Kumar V, Abbas AK, Fausto N, editors, Robbins and cotran pathologic basis of disease. 7th ed. Pennsylvania: Saunders; 2004, 1238.
11. Yu RC, Pryce DW, Mcfarlane AW, Stewart TW. A histopathological study of 643 cutaneous horns. British Journal of Dermatology. 1991; 124(5):449-52.
12. Cock E. A few remarks on a peculiar follicular disease. Guy's Hospital Reports, 1852-1853; 8:151-174.
13. Brownstein Mil, Arluk DJ. Proliferating trichilemmal cyst; a simulant of squamous cell carcinoma. Cancer iy, 81;48:1207-1214.
14. Bunker CB, Smith NP, Russell RCG, Dowd PM. Cock's peculiar tumour. Clinical and Experimental Dermatology, 1989; 14:237-239.
15. Moore RB, Fagan EB, Hulkower S, Deborah C. Skolnik MLS. Mountain Area Health Education The Journal of Family Practice. What's the best treatment for sebaceous cysts?. The Journal of Family Practice. 2007; 56(4):315-316.
16. Sempowski IP. Practice tips - Sebaceous cysts Ten tips for easier excision. Canadian Family Physician, 2006; 52:315-317.
17. Keen G. Operative Surgery and Management. 2nd Ed.

Bristol, United Kingdom: Wright, 1987.

18. Klin B, Ashkenazi H. Sebaceous cyst excision with minimal surgery. *Am Fam Physician*, 1990; 41:1746-8.
19. Zuber TJ. Minimal excision technique for epidermoid (sebaceous) cysts. *Am Fam Physician*, 2002; 65:1409-1412:1417-1418.
20. Tamir J. Challenges of Dressing Acute Infected Sebaceous Cyst Wound Met with New Reinforced Polymem Wic Silver Rope Dressing. Poster. *th Annual professional Wound care Associsation. Philadelphia, PA, 2009, 2-5.
21. EE HE L, Yang CH, Chen CH, Hong HS, Kuan YZ. Comparison of the surgical outcomes of punch incision and elliptical excision in treating epidermal inclusion cysts: a prospective, randomized study. *Dermatol Surg*, 2006; 32:520-525.
22. Mehrabi D, Leonhardt JM, Brodell RT. Removal of keratinous and pilar cysts with punch incision technique: analysis of surgical outcomes. *Dermatol Surg*, 2002; 28:673-7.
23. Ronnen M, Suster S, Klin B. Treatment of epidermal cysts with Solcoderm (a copper ion and acid solution). *Clinical and Experimental Dermatology*, 1993; 18:500-503.
24. Khafif RA, Attie JN. One-Stage Excision of Infected Sebaceous Cysts. *Archives of Surgery*. 1969; 98:117-118.
25. Lookingbill DP, Marks JG. *Principles of Dermatology*. 3rd ed. Philadelphia, PA: WB Saunders Company; 2000.