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EPIDERMAL CYST OF PAROTID GLAND: A RARITY AND A DIAGNOSTIC DILEMMA

Otolaryngology

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KEYWORDS

Introduction:

Epidermal/epidermoid cysts are common lesions occurring in the skin [1]. With review of literature Only 1.6% occur in the oral cavity and are rare [2]. However, primary epidermal cysts of salivary glands appear to be very rare and literature search for the past 25 years revealed only hand full of cases in parotid gland [3] and even rarer in submandibular gland [1, 4, 5].

The epidermal cyst is a benign cyst and develops out of ectodermal tissue. Known by several synonyms in literature such as, epidermal cyst, epidermal inclusion cyst, infundibular cysts, and keratin cysts [24]. They arise following a localized inflammation of the hair follicle or occasionally after the implantation of the epithelium, following a trauma or surgery.

Diagnosis of an epidermal cyst in the parotid gland is essential as it could be easily mistaken for a salivary gland abscess, neoplasm, and other cysts [6].Role of FNAC in the literature has been inconclusive and out of 28 cases in literature, 4 cases report the usefulness of FNAC in identifying such lesions. But in our case we were not able to correctly identify the nature of cystic lesion via FNAC Therefore, an excisional biopsy was necessary for a prompt diagnosis and confirmation. Literature search for the past decade revealed the following :

NO	Author	year	age	gender	side	Location	Radiological appearance	dimensions	treatment	recurrence
1	Princ et al. .[7]	1982	NA	NA	NA	NA	NA	NA	NA	NA
2	Choi et al. [8]	1988	22 22	Male Male	Right left	Superficial lobe Superficial lobe	Fatty Fatty	4 4 cm 4 5 cm	Superficial Parotidectomy Superficial parotidectomy	Following previous simple excision, which was performed 1 year earlier
3	Moody et al. [9]	1998	37	Male	Right	Superficial lobe	Fatty	2.5 1.5 0.5 cm	Superficial parotidectomy	NA
4	Yutaka et al. [10]	1999	38	Female	Right	Deep lobe	Cyst	4 cm	Total parotidectomy	NA
5	Baschinsky et al. [11]	1999	38 26	Male Male	Left Right	Tail of the parotid gland Superficial lobe	Cyst Cyst	3.0 1.9 1.7 cm2.5 2.0 1.5 cm	Superficial parotidectomy Superficial parotidectomy	NO
6	Naujoks et al. .[12]	2007	46	Male	Right	Superficial lobe	Soft tissue mass	3 2.3 2.7 cm	Superficial parotidectomy	No
7	Lee. [13]	2008	15	Female	Right	Superficial lobe	Fatty	3 2.7 3 cm	Superficial parotidectomy	no
8	Islam and Hoffman. [14]	2009	69	Male	Left	Superficial lobe	Cyst	5.5 2.6 1.4 cm	Superficial parotidectomy	No
9	Saylam et al. .[15]	2009	42	Female	Right	Superficial lobe	Fatty	3 3 cm	Superficial parotidectomy	No
10	Ömer et al. [16]	2009	32	male	left	Superficial and deep lobes	Septated cystic mass	NA	total parotidectomy	No
11	Behrad Aynehchi et al. [17]	2010	18	male	right	Superficial and deep lobes	fatty	4.520.5cm	Total parotidectomy with parapharyngeal space dissection	No

12	Seo and Yoon. [18]	2010	35	Male	Right	Superficial lobe extending to the deep lobe	Cyst	4 3 cm	total parotidectomy	No
13	.Tas et al. [19]	2010	9	Male	Right	Superior portion of the superficial lobe	Soft tissue mass	2.4 1.8 2.5 cm	Superficial parotidectomy	No
14	Trandafir et al. [20]	2011	21	Male	Right	Superficial lobe	Soft tissue mass	2 2 2.5 cm	Superficial parotidectomy	No
15	Birsan et al. [21]	2013	20	Female	Right	Superficial lobe	Fat containing cyst	2 2 cm	Superficial parotidectomy	Na
16	Gonzalez Perez and Crespo Torres. [22]	2013	43	Male	Left	Superior portion of the superficial lobe	Soft tissue mass	4.8 4.5 4 cm	Superficial parotidectomy	No
17	. [23] Hegde, Panna N. et al	2013	55	male	left	NA	cystic	32.5cm	Superficial parotidectomy	No
18	Balasubramanian Thiagarajan and et al. [24]	2013	60	female	left	Deep lobe	Mixed density	NA	total parotidectomy	NA
19	Nuri Yigit et al [25]	2014	21	Male	left	Tail of the parotid gland	Fat Containing cyst	3.5 3.5 3 cm	Superficial parotidectomy	No
20	M. Shakeel,et al. [26]	2014	62	male	right	tail	NA	NA	Excision of lump through small left incision	No
21	Faiz Muqtadir, et al. [27]	2014	12	female	left	NA	cystic	2.52 cm	Enucleation of the cyst	No
22	Dr. Souvagini Acharya et al. [28]	2014	33	female	right	NA	Fatty + osseo-dental stuctures	22 cm	Superficial parotidectomy	No
23	Altuntas, et al. [29]	2014	58	male	left	Superficial lobe	cystic	87 cm	excision	No
24	Anuradha Ganesan et al. [30]	2015	62	female	right	NA	cystic	4.56 cm	Superficial parotidectomy	No
25	Sharm P et al. [31]	2015	24	male	right	NA	cystic	3.22 cm	Superficial parotidectomy	No
26	[32] Sanjay Helale et al.	2015	22	female	right	Superficial lobe	cystic	NA	Superficial parotidectomy	No
27	Madan S et al. [33]	2015	58	female	left	Epidermal layer not involving parotid	cystic	NA	Excisional biopsy	No
28	Murat Damar et al. [34]	2015	17	male	right	Superficial lobe	cystic	NA	Superficial parotidectomy	No
29	Our case	2017	47	male	right	Epidermal layer not involving the parotid	cystic	32.52 cm	Excisional biopsy	No

Case report:

We present our case of A 47-year-old male patient presented to our outpatient department with a complaint of progressive swelling on the right parotid area in front of tragus for 4 years. There was no history of pain, fever, difficulty in swallowing, or any discharge from the swelling. While patient was otherwise medically free with no history of trauma or any previous surgeries reported in the facial region.

On examination, there was a localized rounded swelling in the right preauricular region. swelling was 3×3 cm in size and normal skin color with no discharge. Facial nerve was found to be intact. On palpation, the swelling was soft in consistency, nontender, and nonpulsatile and mobile. Bimanual palpation was normal and no palpable lymphadenopathy was identified in neck.

CT scan showed :

A well defined iso dense lesion seen related and abutting right parotid gland . It appeared in separable from underlying superio- lateral aspect of its superficial lobe of right parotid gland and causing focal contour bulge . Following IV contrast injection it showed no significant enhancement and measures about 32×21×24 mm at its maximum dimensions.

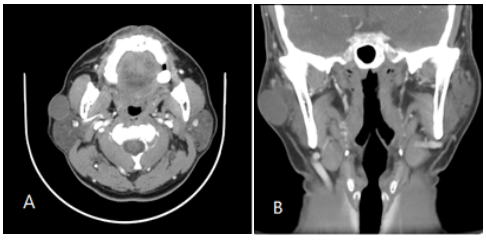

Fig1, CT Neck W/IV contrast, a, axial view. B, coronal view

Patient was planned for total Excision of Cyst under General Anesthesia The Cyst was found to be above the Superficial lobe and removed in toto.. Cyst was adherent to overlying skin. Meticulous dissection undertaken to release it. While taking care not to spill the content of cyst or making the skin flap extremely thin in the process. The gross examination revealed : a cystic to firm mass measuring 3×2.5×2 cm FIG(2).

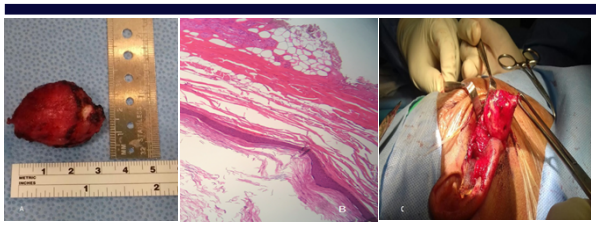

Fig2.a, cystic to firm mass measuring 3×2.5×2 cm. b, cyst lined by keratinous squamous epithelium with keratinous debris .c, intraoperative picture

Post op vacuum drain was placed, facial nerve was intact and patient discharged 2nd post op day following the removal of drain. 6 months follow up showed no recurrence of disease.

The final Histopathology report showed on sectioning cystic lesion with smooth inner wall 0.1 cm and Yellow cheesy material as contents. stratified squamous epithelium with an intraluminal laminated keratinized material confirming the diagnosis of epidermal cyst in the right parotid gland.

Discussion:

Epidermal cysts are common skin lesions that consist of epithelial lined cavities with viscous or semisolid epithelial degradation products [35]. The head and neck is the third most common site, after the coccyx and the ovary, with a rate of 44.5 and 42.1 %, respectively [42]. Epidermal cysts usually occur secondary to obstruction while dermoid cysts arising from developmental epithelial remnants or they are secondary to traumatic implantation of epithelial fragments [37]. Epidermal cyst of parotid gland is a very rare benign cystic lesion and is seen in young to middle age adults [24]. Of these 29 cases(except the first one) and in addition to ours, in Table 1, 20 were male (66.7%) and 10 were female (33.3%). Patients age ranged from 9 to 69, with median of 35. 19 of these cases lesion was in right parotid (63.3%),and remaining 11 were in left (36.7%). 15 case were cystic appearance while 9 cases was fatty. Mixed density and soft tissue mass account for the rest of cases. The exact histogenesis of salivary epidermal cyst is uncertain, but it may have arisen from developmental branchial pouch analogue epithelium which can occur in salivary gland [38] or could be due to obstruction in salivary duct within the substance of the gland leading to epithelial lining cavity lined with viscous semisolid epithelial degradation product [3] . These cysts clinically are painless swellings without any attachment to the overlying skin or involvement of facial nerve [24]. If the cyst stays for longer time, it might get infected forming sinus or fistulas [3]. The diagnosis of the cystic lesion is challenging due to difficulty in determining the benign or malignant processes. Malignant lesions are frequently suspected when there is a rapid enlargement with associated lymphadenopathy or facial nerve paralysis [24, 41]. The differential diagnosis may include branchial cleft cyst which is “congenital”, or may be “acquired” due to inflammation, obstruction, neoplasm, calculi and trauma [24]. Also if it occurs in the submandibular region, it can be mistaken for salivary gland abscess, neoplasm, tuberculous lymphadenitis, metastatic node, or any cyst [1, 39]. The diagnosis can be proven by various investigations like FNAC, ultrasound, and CT [2, 40]. US imaging often reveals a well-circumscribed cystic lesion which may have mixed internal echoes because of its fat-resembling content. On CT scans, the lumen is usually filled with a homogenous, hypodense fluid-quality material. This material may be reminiscent of fat as well. Magnetic resonance imaging (MRI) with its better soft tissue contrast and improved imaging capacity has advantage over US and CT. MRI of a DC typically depicts a cystic mass, hypointense on T1-weighted images and hyperintense on T2-weighted ones with peripheral enhancement on contrast. FNAC may show squamous cells with reactive atypia when the cyst was superimposed with acute or chronic inflammation. The significance of FNAC for preoperative diagnosis was highlighted in some reports [11-14,23,24,27,28] But in our case the FNAC was inconclusive . In summary, FNAC may provide reliable information on cystic lesions if there are supporting radiologic findings, but can also be deceiving because some well-differentiated squamous cell carcinomas and malignant lesions showing squamous metaplasia may share the benign-looking cytologic features with DCs. Hence the definitive diagnosis should always be made by histopathologic examination.

Histopathological examination of the cyst is required for conformation of diagnosis. Histologically, epidermal cyst has stratified squamous epithelial lining and is usually lined with cheesy material or keratin. But a dermoid or epidermoid cyst contains skin adnexa or other epidermal structures like sebaceous gland or hair follicle. Implantation dermoid is not derived from epidermal appendages and may contain foreign body [36] even though it appears very similar to epidermoid cyst. simple excision of the cyst in the parotid gland was not recommended to avoid the possible remnants of the lesion which may be responsible for late recurrence. In one case report, superficial parotidectomy had to be done after 1 year from the initial simple excision(15)

Conclusion:

Epidermal cysts of the parotid gland origin are extremely rare and a diagnostic challenge, but still, epidermal cysts should be considered as a differential diagnosis in cases of painless long standing enlargement of parotid gland which is soft in consistency. Best treatment option for such cases is local complete excision of cyst.

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