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Parotid Fistula: Available Treatment Modalities

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Abstract: ***Parotid fistulas are rare and painful post operative complications of the maxillofacial region. Parotid fistulas due to the injury of the stensons duct can be identified on table and treated through primary repair, if not recognized it can lead to salivary fistula and sialocele formation which cannot heal spontaneously because of continuous flow of saliva. Early detection and treatment is necessary so as to prevent wound dehiscence and infection.***

Keywords: parotid gland, parotid fistula, pressure dressing

1. Introduction

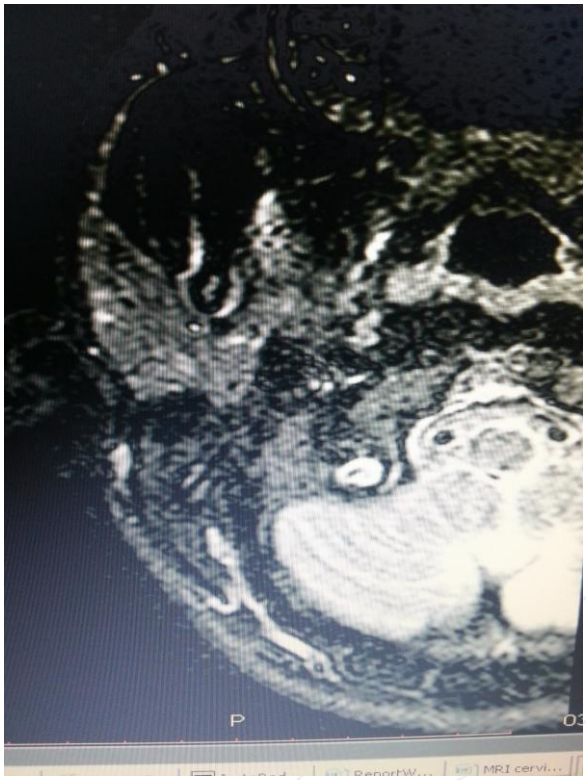
A parotid fistula is a chronic communication between the skin and a salivary duct or gland, through which saliva is discharged. The most common cause of parotid fistula is trauma, followed by malignancy, operative complications (parotid & TM joint surgeries), rupture of parotid abscess, inadvertent incision of parotid abscess with an incidence of 14%. Acute suppurative parotitis is rarely known to cause parotid fistulas and while there are various treatment options available, it is necessary to the treat to the patient based on the history of duration, location & type of fistula.
Parotid fistulas can be of 2 types either glandular or ductal. Glandular fistulas have scanty discharge and tend to heal spontaneously with conservative treatment, whereas ductal fistulas have copious discharge and require some form of intervention.

A New Classification of Parotid Injury
(Based on Sialographic Appearances)
Glandular Injury
Type 1: Injury to the parenchyma or to minor ducts (G 1)
Type 2: Injury to a major intraparotid duct (G2)
Ductal Injury
Type l(a): Partial transection of the parotid duct [D1(a)]
Type 1(b): Complete transection of parotid duct [Dl(b)]
Type 2(a) Partial disruption of parotid gland-duct junction [D2(a)]
Type 2(b) Complete disruption of parotid gland-duct junction [D2(b)]

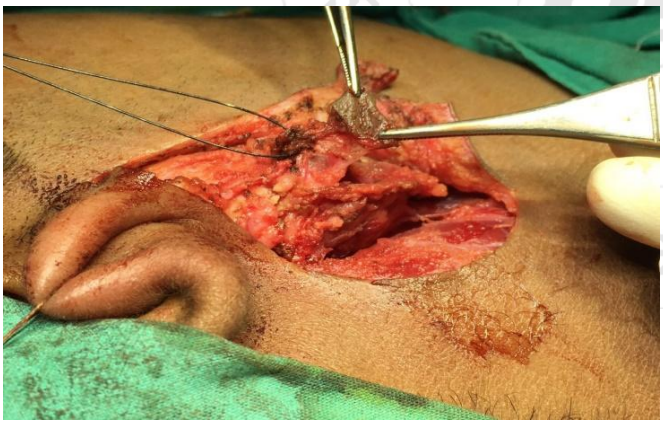
2. Case Report

A 19 year old male presented with complaints of discharge from infra-auricular region since 2years. The discharge was watery, colorless, odorless and increased with gustatory stimuli. There is a previous history of painful pre auricular recurrent swelling which was treated with antibiotics at a different hospital. There was no history of trauma or surgery No known co –morbidities were present . On examination there was a 3x3mm opening with discharge of watery fluid noted in the region of right mastoid. Intraoral examination revealed ductal opening was normal, no palpable stone, no pus discharging from papilla.

Investigations:
MR Fistulogram was suggestive of a tract in the subcutaneous tissue plane of right posterior auricular region over lower mastoid region is seen .It enters the parotid gland and probably communicates with parotid duct.



Conservative line of management with pressure dressing was done initially but patient did not improve symptomatically. The patient was then taken up for fistulectomy and a decision superficial parotidectomy if required, depending on intraoperative findings. Intraoperatively the fistula track was deep below the parotid fascia, the parotid gland was firm in consistency, suggestive of chronic inflammation. So the decision of superficial parotidectomy was done.



3. Discussion

An injury classification system has been devised by Van Sickels. This system divides the parotid injuries into three regions: 1. Posterior to the masseter or intraglandular (site A), 2.Overlying the masseter (site B), and 3.Anterior to the masseter (site C).

Management of parotid fistula is both conservative & surgical. Conservative management includes pressure dressings, anti-sialogouges, sclerosant injections & Radiation therapy. Surgical options include fistulectomy, duct repair, tympanic neurectomy and superficial parotidectomy.

Treatment options

- Pressure dressings
- Anti-Sialogogues
- Radiation therapy
- Parasympathetic Denervation (Tympanic Denervation)
- Cauterization of the Fistulous
- Reconstruction of the duct
- Superficial or Total Parotidectomy tract

The principal of pressure dressing is that the lobules of the gland are contained in relatively inelastic capsules, a sustained rise in duct pressure leads to compression of capillary and veins in the lobules, resulting in a reduction in the blood flow and diminution of secretion, leading to the atrophy of the gland in the long-term. This probably occurs because as the lobules of the gland are contained in relatively inelastic capsules and inju a sustained rise in duct pressure leads to compression of capillary and veins in the lobules, resulting in a reduction in the blood flow and diminution of secretion. The findings of this study with sequential radioisotopescans support this sequence of events. The healing of parotid fistulae and sialocele in patients with complete duct transection after both conservative therapy as described in this report and that after surgical internal diversion probably result from glandular atrophy after ductal obstruction from cicatrization. A similar process takes place in patients with duct ligation

Propantheline bromide (Pro-Banthine), is a commonly used agent which inhibits the action of acetylcholine at the postganglionic nerve endings of the parasympathetic nervous system (adult dose 15 mg PO qid half an hour prior to meals.

The anticholinergic drugs have many undesired side effects such as xerostomia, constipation, photophobia, tachycardia and urinary retention.

Radiation therapy induces fibrosis & atrophy of the gland. Approximately 1800 rads for more than 6 weeks is required .Especially considered for refractory salivary fistulas

The major secretomotor fibers to the salivary gland are cholinergic parasympathetic which responds to inhibition by the botulinum toxin. The localized cholinergic block achieved with botulinum toxin injections avoids the side

effects caused by systemic anti-cholinergic drugs and avoids surgical risks. This leads to a temporary block in salivary flow, followed by glandular atrophy, thus allowing healing of the fistula.

Another form of treatment is tympanic nerve section, which has a low success rate and can take a long time to achieve healing of the fistula.

Three operative techniques have been described include repair of the duct over a stent, ligation of the duct, and fistulisation of the duct into the oral cavity.

Injuries of the proximal duct near the parotid substance are usually best treated by ligation the duct, and fistulisation of the duct into the oral cavity.

Duct ligation causes “Physiologic Death” of the gland. Duct ligation may lead to early oedema of the gland with accompanying pain from stretching of the capsule. This usually subsides spontaneously within 1-2 weeks as atrophy of the gland occurs. Late complications of ligating the duct include chronic infections of the remaining glandular substance.

4. Conclusion

Parotid fistulas are rare and cumbersome post operative complications following surgeries, trauma, malignancies. Although difficult to treat early detection and use of appropriate treatment modalities like pressure bandage application, anti-cholinergic agents have led to successful management of this condition.

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