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## Case report

# Ganglion cyst of temporomandibular joint: A case report and literature review

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## ABSTRACT

A ganglion cyst is a very rare lesion associated with the temporomandibular joint (TMJ). This lesion filled with viscid fluid or gelatinous material arises from myxoid degeneration of the connective tissue of the joint capsule. A 40-year-old Chinese woman with ganglion cyst of the left TMJ is presented, and the differential diagnosis, histological characteristics and management of the ganglion cyst are discussed. A review of the literature is also presented.

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## 1. Introduction

The ganglion cysts most commonly occur on the extensor surface of the wrist, and less on the dorsal surface of the foot and the lateral aspect of the knee [1]. These cystic structures are divided into 2 types according to the presentation: those with walls that consist of fibrous connective tissue named as ganglion cyst, and those with lined by synovial cells coined as synovial cyst [2]. Both ganglion cysts and synovial cysts can develop in the TMJ but are rare [1–5]. The clinical diagnosis of the condition is difficult, and it is not unusual that a definitive diagnosis is not made until intraoperative observation or postoperative microscopic examination.

In the present article, a case of ganglion cyst of the TMJ is presented, the differential diagnosis and management as well as histological characteristics are discussed. Meanwhile, the published articles about the ganglion cysts of the TMJ are also reviewed.

## 2. Case report

A 40-year-old Chinese woman was referred to our department with a complain of swelling and painless mass in the left preauricular region of 2-month duration. Her medical history was noncontributory, and no history of traumatic injury was reported. Clinical

examination revealed a 1 cm × 1 cm mass at the left preauricular region. The mass was smooth, firm, tender to palpation, and prominent on the maximal mouth opening. There was no neurologic deficit of the cranial nerves. No limitation of the mouth opening was observed. And the occlusion was also normal. There were no enlarged cervical lymphnodes. Complete blood count and differential leukocyte count were normal. Computed tomography showed a hypodense ovoid cystic mass adjacent to the left TMJ (Fig. 1).

The patient was admitted for surgical investigation and excision of the lesion. Under general anesthesia, a preauricular incision on the left side was made and carried down to the mass. A small cyst-like lesion was identified adjacent to the lateral portion of the condyle, which was connected to the surface of the capsule but not to the parotid gland. The mass was then dissected carefully from the lateral surface of the TMJ capsule and completely excised with the entire cyst. And there was no communication with the inner articular space (Fig. 1). The wound was then sutured in layers. The postoperative course was uneventful without damage to the facial nerve. Follow-up examination of 24 months later showed no recurrence of preauricular swelling and pain.

## 3. Pathological findings

Histological examination of the lesion showed a cystic structure. The wall of the lesion comprised fibrous connective tissue with areas of hyalinization partly lined on the inner aspect by thin, flattened cells (Fig. 2). Immunohistochemical staining of these lining cells showed a negative reaction to S-100 and to factor VIII and a positive reaction to vimentin (Fig. 2). In addition, histochemical staining of the lesion with alcian blue showed areas of myxoid

\* AsianAOMS: Asian Association of Oral and Maxillofacial Surgeons; ASOMP: Asian Society of Oral and Maxillofacial Pathology; JSOP: Japanese Society of Oral Pathology; JSOMS: Japanese Society of Oral and Maxillofacial Surgeons; JSOM: Japanese Society of Oral Medicine; JAMI: Japanese Academy of Maxillofacial Implants.

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**Table 1**  
Data of the cases with ganglion in the temporomandibular joint of the reviewed references.

Case	Author (year)	Race	Age/sex	Site (L/R)	Clinical feature	Pre-operative diagnosis	Size (mm)	Intra-capsule (Y/N)	Treatment	Recurrence (months)
1	Heydt (1977)	ND	47/F	L	Painless mass	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	SE	<sup>a</sup>
2	Ethell (1979)	ND	28/F	R	Swelling, painless mass	Tumor of the deep lobe of the parotid gland	ND	ND	SE	ND
3	Patel (1979)	White	45/F	R	Swelling, painless mass	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	SE	<sup>a</sup>
4	Kenney (1987)	ND	44/F	L	Swelling, painless mass	ND	ND	ND	SE + partial capsule resection	ND
5	Shiba (1987)	ND	28/M	R	Painless mass	ND	15	Y	SE + partial capsule resection	N/24
6	Copeland (1988)	Caucasian	60/F	L	Swelling, painless mass	ND	ND	ND	SE	ND
7	El Massry (1989)	ND	33/F	R	Painless mass	ND	10	N	SE	ND
8	Tom (1990)	ND	22/M	R	Painless mass	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	SE	<sup>a</sup>
9	Hopper (1991)	ND	58/F	R	Swelling, painful	ND	10	Y (bound to the condyle)	SE + partial capsule resection	ND
10	Lopes (1994)	White	33/F	L	Pain and enlargement of pre-auricular region	ND	15	Y	SE + temporolig flap	ND
11	Chang (1997)	ND	32/F	L	Swelling, painful	ND	15	N	SE	N/24
12	Zhang (1997)	Chinese	49/F	L	Swelling, painless mass	Chronic lymphadenitis	15	N	SE + partial resection of the capsule	ND
13	Goudot (1999)	Caucasian	35/M	R	Painful gradual swelling	Preauricular adenopathy	10	N	SE	N/12
14	Takayuki (1999)	Japanese	59/F	L	Swelling, painless mass	ND	ND	Y (adhered to the condyle)	SE + partial condyloplasty	N/24
15	Allbright (2000)	White	51/F	R	External auditory canal mass, mastoid	ND	ND	N	SE	ND
16	Nahlieli (2000)	ND	57/F	L	Swelling, painless mass	ND	6	Y	SE	N/1
17	Nobuo (2000)	Japanese	52/F	L	Painless mass	ND	30	N	SE	ND
18	Takaku (2001)	Japanese	50/F	R	Swelling, painless mass	ND	10	N	SE	ND
19	Kim (2003)	ND	37/F	L	Painless mass	ND	ND	N	SE	N/12
20	Silva (2005)	ND	51/F	L	Swelling and pain	Ganglion cyst, synovial cyst, cystic neoplasm of the parotid	12	N	SE	N/9
21	Sugiura (2006)	Japanese	66/M	L	Painless mass	ND	25	N	SE	N/15
22	John (2006)	ND	50/F	R	Facial pain and numbness	ND	ND	ND	SE through the floor of the middle cranial fossa	N/24
23	Wang (2009)	Chinese	40/F	L	Swelling, painless mass	ND	15	N	SE	N/18
24	Deng (2010)	ND	45/F	L	Swelling, painless mass	ND	ND	N	SE	N/24
25	Khachi (2011)	ND	56/M	L	Frequent left ear infection, mass in the ear canal	ND	ND	Y (communicating with glenoid fossa)	Partial mandibular condylectomy, partial resection of capsule and skin grafting	ND
26	Wu (2011)	ND	59/F	R	Swelling, painless mass	ND	40	ND	SE	ND
27	Suhr (2012)	ND	30/M	L	Swelling, painful	ND	ND	ND	SE	ND
28	Present	Chinese	40/F	L	Swelling, painless mass	Cystic lesion	10	N	SE	N/24

ND: no description; F: female; M: male; R: right; L: left; SE: surgical excision.

<sup>a</sup> Information not available.

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