Giant cell reparative granuloma (GCRG) of the jaw was previously diagnosed as Giant cell tumour. In 1953, GSRG was first proposed by Jaffe (1) as a non-neoplastic fibrous lesion with multinucleated giant cell of jaw bone. The mandible is the most frequently affected bone, particularly at the anterior region (2). The mandibular condyle is rarely affected and only a few cases have been reported in the literature (3-5). To our knowledge, there is no article in the literature describing the long-term result of reconstruction following resection of GCRG of the condyle. Accordingly, the present article also reviews the reconstructive options in the management of GCRG of the condyle.

Key Words: Condyle reconstruction; Costochondral graft; Craniofacial reconstruction; Giant cell reparative granuloma; Mandibular condyle cancer

CASE PRESENTATION

A 37-year-old Asian woman was admitted to the Chang Gung Memorial Hospital (Taoyuan, Taiwan) with a six-month history of an enlarging mass over the left pre-auricular area. Physical examination revealed a firm, bony mass approximately 4 cm × 3 cm in size at the anteroinferior position of the left pre-auricular area. Computed tomography of the head revealed a 4 cm × 3 cm ballooning cystic bone lesion that involved the left condyle, neck of the condyle and upper ramus of the mandibular region. It involved both the inner and outer cortices with mixed linear radiolucent and radiopaque areas

Figure 1) A 37-year-old Asian woman presented with a firm, bony mass approximately 4 cm × 3 cm in size at the anteroinferior position of the left pre-auricular area. Computed tomography of the head revealed a 4 cm × 3 cm ballooning cystic bone lesion that involved the left condyle, neck of the condyle and upper ramus of the mandibular region. It involved both the inner and outer cortices with mixed linear radiolucent and radiopaque areas

Figure 2) Microscopically, the tissue section revealed the presence of multinucleated giant cells in the background of oval to spindle cells. Hematoxylin and eosin stain, original magnification ×150
GCRG of the mandibular condyle

Life (1). Females are affected more than males (6,7). GCRG is considered to be more common in the mandible than in the maxilla. The majority of cases occur in the molar-premolar area and could extend to the ramus (7,8). Involvement of the condyle is rare (3-5,9).

Some cases are asymptomatic (8); however, the most common presentation of GCRG is a painless expansile mass in the face or the oral cavity (10). Additionally, ≥20% patients experience pain or paresthesia (1,6,11). Other symptoms may include facial asymmetry, loosening or displacement of teeth, and pathological fractures (12).

The treatment modalities most frequently used are enucleation, curettage alone or en bloc resection whenever possible (13). Other treatment modalities include intralesional injection of corticosteroid (14,15) or human calcitonin injection (16). Radiotherapy should be avoided because of theoretical risk of long-term malignant transformation (17,18).

The goals of reconstruction of a mandibular defect involving the condyle are to achieve a stable articulation and regain continuity, as well as restoring facial form and dental occlusion.

**DISCUSSION**

GCRG was first described by Jaffe (1) as a locally reparative reaction of bone possibly due to an inflammatory response, hemorrhage or local trauma. GCRG is commonly diagnosed during the first two decades of life (1). Females are affected more than males (6,7). GCRG is considered to be more common in the mandible than in the maxilla. The majority of cases occur in the molar-premolar area and could extend to the ramus (7,8). Involvement of the condyle is rare (3-5,9).

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The goals of reconstruction of a mandibular defect involving the condyle are to achieve a stable articulation and regain continuity, as well as restoring facial form and dental occlusion. There is ongoing controversy regarding the best way to reconstruct the condyle, whether to use autogenous tissues or alloplastic materials. However, in
our experience, costochondral rib graft remain the preferred method of reconstruction. This is mainly because we are able to achieve consistently good results that are shared by others (19-21).

Alloplastic replacement of the mandibular condyle has obvious additional advantages including rigid stabilization, lack of donor-site morbidity, an unlimited supply of prostheses and the ability to initiate early physical therapy. However, its applications have other concerns and potential disadvantages. There is an overall 10% complication rate with metallic alloplastic condylar heads including pain, loose plate, limited jaw opening and plate exposures in irradiated patients (22). Moreover, the alloplastic metallic condylar head is very expensive and some have shown that alloplastic prosthesis is not a suitable option for temporomandibular joint reconstruction(s) (23). Other concerns include the most feared complications of temporal bone erosion into the middle cranial fossa or intractable pain, which has been reported with some total temporomandibular joint prostheses and in tumour-related plate placements (22). Recently, Tang et al (24) reported a superior result using a prefabricated titanium implant when compared with costochondral graft. However, if the technique was to be applied in the present case, we would have needed to create a larger operative wound to insert titanium plates as illustrated in the publication (24).

In our experience, costochondral rib grafts have been used for reconstruction of the condyle with good success and have remained our preferred method of condylar reconstruction following tumour resections, traumatic injuries or congenital abnormalities. Intraoperative temporary maxillomandibular fixation is recommended.

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