

รายงานผู้ป่วย

## Osteosarcoma of the mandible: a case report and literature review.

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**Sakwattanawekin D, Arjhansiri K. Osteosarcoma of the mandible: a case report and literature review. Chula Med J 1996 Dec;40(12):1007-13**

*Osteosarcoma of the mandible is very rare as compared to long bone osteosarcoma. This report describes a case of right mandibular osteosarcoma with its incidence, radiographic manifestations and the pathophysiology of the tumors from two different sites.*

**Key word:** *Osteosarcoma of the mandible.*

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Received for publication. November 1, 1996.

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ดาริน ตักดีวัฒนเวดิน, เกียรติ อัจฉาญศิริ. รายงานผู้ป่วยมะเร็งกระดูกชนิด Osteosarcoma ที่ขากรรไกรล่าง. จุฬาลงกรณ์เวชสาร 2539 ๓.ค; 40(12):1007-13

มะเร็งกระดูกชนิด Osteosarcoma ที่ขากรรไกรล่างพบได้น้อยเมื่อเทียบกับมะเร็งชนิดเดียวกันที่บริเวณปลายกระดูกแขนหรือขาซึ่งพบได้บ่อยกว่า บทความนี้เป็นการรายงานผู้ป่วย 1 ราย ที่มี Osteosarcoma ที่ขากรรไกรล่างขวา และได้วิจารณ์เปรียบเทียบอัตราความชุกของโรค, ลักษณะของโรคในภาพรังสี, และการดำเนินการของโรคระหว่างมะเร็งทั้งสองตำแหน่งนี้

Osteogenic sarcoma is rare in the mandible. There were only 152 reported cases of the jaw osteosarcoma from 1976 to 1994. The purpose of this report is to compare the incidence, pathophysiology, prognosis and treatments between conventional and mandibular osteosarcoma.

### A case report

The patient was a 37 year-old male who had swelling of the right cheek for 3 months. A dentist removed three molar teeth, but the cheek remained swollen. One month later, he came to Chulalongkorn Hospital.

The initial examination revealed a large cauliflower - shaped mass of the right lower gum involving retromolar trigone, loss of the molar teeth, good mobility of tongue and no cervical lymphadenopathy. The biopsy may be odontogenic myxoma, myxomatous part of the others can't be rule out. After two week's time the rebiopsy was performed and was inadequacy. So the last biopsy was done about 2 weeks later on Nov. 11<sup>th</sup>, 1996. The patient returned and was admitted on an emergency basis due to massive bleeding at the gum, totalling about 1500 ml. Physical examination at admission revealed hypotension and tachycardia. He was markedly pale but without jaundice. There was a large cauliflower mass at the retromolar and molar areas of the right lower gum involving the base

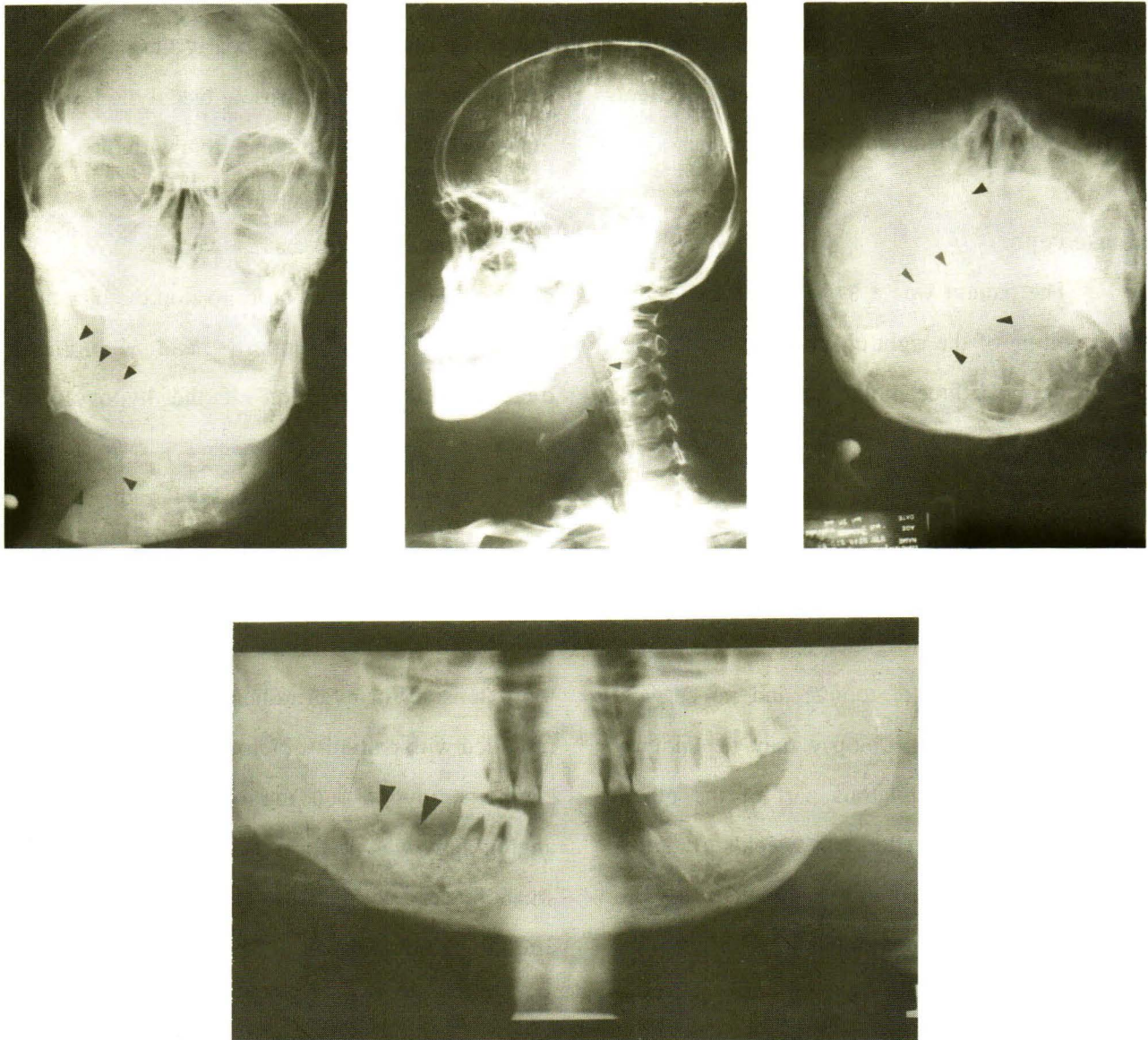
of tongue. The tongue was fixed. There was marked swelling of the right mandibular area.

The radiologic findings showed a large soft tissue mass occupying nearly the whole right side of the face. There was an osteolytic lesion at the inner side of the right mandible with the typical sunray periosteal reaction (Fig.1).

The initial measures were packing with gauze and adrenaline in order to stop the bleeding, and also provision of supportive and symptomatic treatments for correction of the hypovolumic shock.

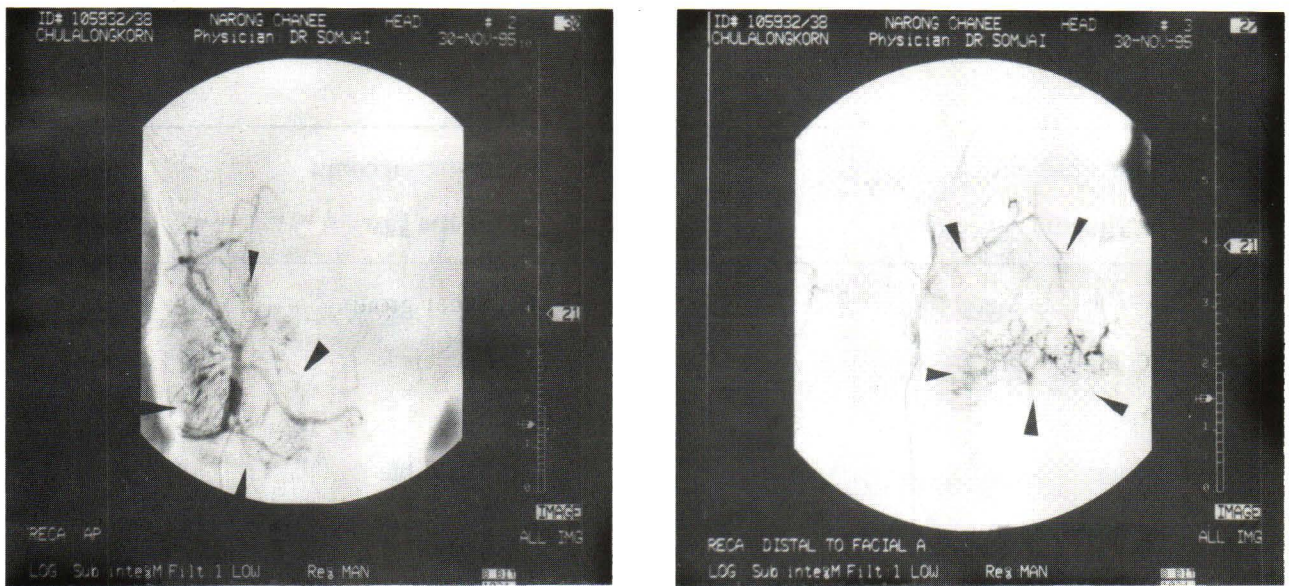
One month later in an ENT-radio-pathologic interdepartment conference, the histology of the tissue was concluded to be **chondroblastic osteosarcoma**. This tumor was determined to be too extensive for even radical surgery so he was provided with palliative radiotherapy and systemic chemotherapy of 100 mg of Adriamycin. An angiography was performed and showed multiple small feeders with diffuse tumor staining in the arterial phase (Fig. 2). The patient underwent one course of intra-arterial chemoinfusion with 150 mg of abiplatin and 100 mg of adriamycin. The tumor showed no response to these treatments. It continued to grow and still bled off and on. Supportive and symptomatic treatments were continued.

The patient died 3 months after the admission due to upper airway obstruction, in spite of a tracheostomy having been performed.



**Figure 1.** Plain radiograph of the skull (a) AP view reveals ill-defined osteolytic lesion at inner side of the right mandible with typical sunray periosteal reaction, (b) Lateral, (c) Water's and (d) Panoramic views show the same findings.





**Figure 2.** Angiography of the right external carotid artery. (a) AP view shows multiple small feeders with diffuse tumor staining. (b) Lateral view shows the same findings.

## Discussion

Osteogenic sarcoma is the 2<sup>nd</sup> most common primary malignant bone tumor. (Table 1.)

A conventional osteosarcoma is the usual osteosarcoma found in the metaphysis of long bones and is classified into osteoblastic, chondroblastic and fibroblastic osteosarcomas, depending on the predominant matrix pattern.<sup>(1)</sup> (Table 2.)

The occurrence of osteosarcoma of the jaw bone is about 5%, as compared to 63% femurs and 28% in the tibia. Jaw osteosarcoma occurs 44.5% in maxilla and 55.5% in mandibles. The radiographic findings of these tumors are mostly osteolytic in the mandible and sclerosis in maxilla. The periosteal reaction is to sunrays. The prognosis of mandibular osteosarcoma is better than for conventional ones. The patient

**Table 1.** Classification of osteogenic sarcoma and their distribution in the mayo clinic experience<sup>(1)</sup>

Type	%
Conventional osteosarcoma	72.3
Osteosarcoma of the jaw	6.1
Osteosarcoma in Paget's disease	3.1
Post radiation osteosarcoma	3.8
Osteosarcoma in benign condition	0.6
Osteosarcoma in dedifferentiated chondrosarcoma	3.1
Multicentric osteosarcoma	0.2
Talangiectasia osteosarcoma	3.2
Low-grade central osteosarcoma	1.2
Parosteal osteosarcoma	4.1
Periosteal osteosarcoma	1.6
High-grade surface osteosarcoma	0.7
<b>Total</b>	<b>100</b>

**Table 2.** The comparison of these two types is below.

Conventional osteogenic sarcoma	Osteosarcoma of the jaw
1. Age 10-25 years old about 10 to 25 years older	1. Older group, <sup>(2)</sup>
2. Site Femur 63%, tibia 28%	2. Site Mandible 5% <sup>(3)</sup>
3. Sclerosing form Osteolytic form Mixed form (the most common)	3. Osteolytic form in mandible Sclerosis in maxilla <sup>(2)</sup>
4. 50% Osteoblastic type 25% Chondroblastic type 25% Fibroblastic type	4. 50% of the tumors are chondroblastic type <sup>(4)</sup>
5. Periosteal reaction to sunrays	5. Periosteal reaction sunrays
6. 5 year survival rate about 20% a highly lethal disease with high local recurrence rates <sup>(3,8)</sup>	6. Better prognosis but remains
7. Treatment Radical surgery with pre-and-post operative chemotherapy	7. Treatment Adequate surgery with adjuvant chemotherapy <sup>(5,6-8)</sup>

rarely dies from distant metastasis. Local recurrence and intracranial invasion are the main causes of death.<sup>(3)</sup> Radical surgery is the treatment of choice with pre-and post-operative chemotherapy.<sup>(5,6-8)</sup>

### Summary

Mandibular osteosarcoma occurs in a somewhat older age group and has better prog-

nosis than the conventional form. Most patients are presented with rapidly growing and painless or minimal painful masses.<sup>(3)</sup>

The radiologic manifestation is an osteolytic lesion in the mandible, and occasionally the sunray periosteal reaction.

Radical surgery is the treatment of choice. Anyway for the role of the chemotherapy and radiation therapy, the trial is ongoing.

Radiation therapy is not the sole initial treatment, but as one of a multimodality initial treatment.

It is important to make an early diagnosis. Complete surgical removal with adjuvant chemotherapy can lead to an excellent prognosis.<sup>(5)</sup>

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