

原文題目(出處)：	Concomitant Central Giant Cell Granuloma and Aneurysmal Bone Cyst in a Young Child
原文作者姓名：	Deepika Pai
通訊作者學校：	Manipal College of Dental Sciences
報告者姓名(組別)：	姚又勤
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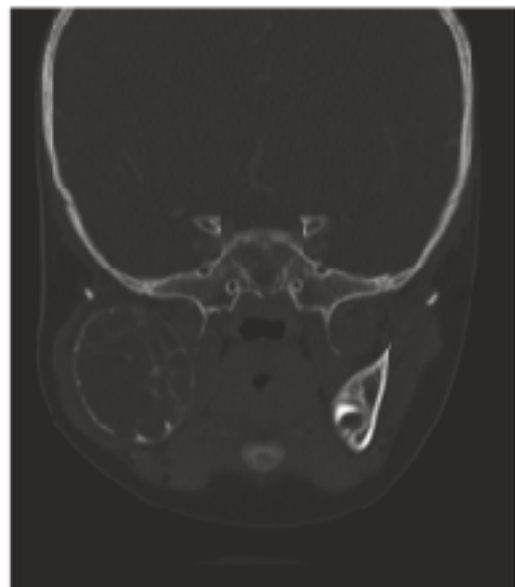
Introduction	
Central Giant Cell Granuloma (CGCG)	Aneurysmal bone cysts (ABC)
<ol style="list-style-type: none"> 1. benign tumor of the jaw seen in children and young adults. 2. approximately 7% of all benign tumors of the jaws 3. 30% of the cases are of aggressive variants and warrant wide excision 4. Wide excision of the aggressive lesion is the time-tested treatment modality 5. Rehabilitation following excision can also be challenging 	<ol style="list-style-type: none"> 1. intra-osseous accumulation of variable-sized, blood-filled spaces surrounded by cellular fibrous connective tissue
Case Report	
Present Illness	<ol style="list-style-type: none"> 1. A two-year-old male child presented with a unilateral swelling on the right side of the face. The patient's mother noticed the swelling four months back, and since then the lesion had been progressively increasing in size. 2. Trauma(-) 3. Fever (-) 4. Trismus(-) 5. Family history of muscle-skeletal disorder (-)



<p>Objective Finding</p>	<p>Extraoral examination :</p> <ol style="list-style-type: none"> 1. the diffuse swelling was present with posterior region of the right side of the lower third of the face. Overlying skin was normal in color and texture with no signs of local inflammation 2. Palpation : the swelling was nontender, bony hard in consistency, and extending from the posterior border of the mandible to anterior margin of the ramus of the mandible. 3. Intraoral examination : revealed erupted deciduous dentition with no carious lesion <p>Laboratory investigations:</p> <ol style="list-style-type: none"> 1. normal serum values of calcium, phosphorus, urea, creatinine, and PTH. 2. Alkaline phosphatase values were marginally raised. <p>Radiographs for chest ribs and skull bones:</p> <ol style="list-style-type: none"> 1. not reveal the presence of such similar radiolucent lesions. <p>Ultrasonography :normal glandular echotexture</p>
<p>Contrast enhanced CT</p>	<ol style="list-style-type: none"> 1. large multiloculated expansive lesion measuring 4.2 cm anteroposteriorly, 3.5 cm mediolaterally, and 4 cm superoinferiorly 2. The inferior alveolar nerve canal was displaced inferiorly. 3. Follicle of the permanent first molar tooth was missing on the affected side 4. Multiple sites of buccal, as well as lingual bony cortical plate perforation 5. Overlying periosteal layer and adjacent tissue planes were intact and maintained anatomic continuity.



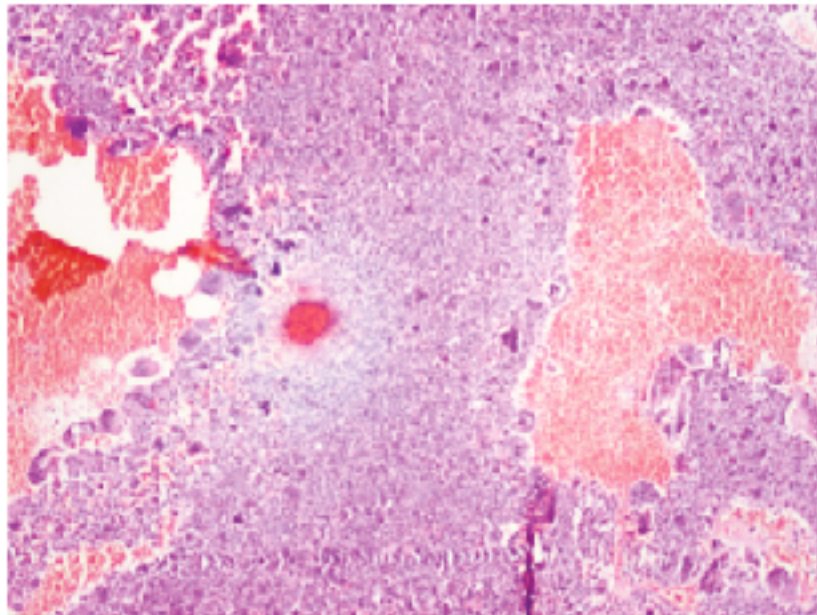
(a)



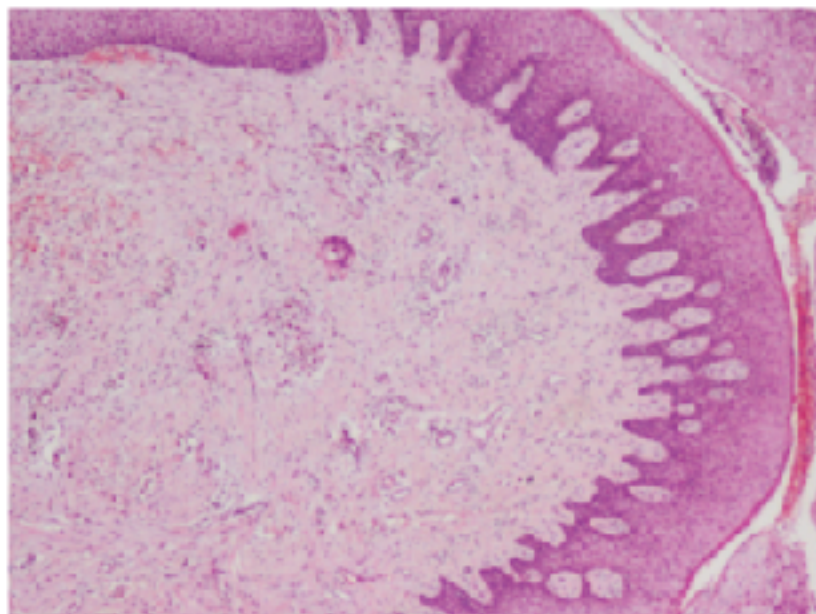
(b)

FIGURE 2: 3D CT scan showing ballooning expansion of cortex.

<p style="text-align: center;">Histopathological finding</p>	<ol style="list-style-type: none"> 1. highly cellular stroma comprising abundant multinucleated giant cells, plump spindle cells, and stromal mononuclear cells. 2. The multinucleated giant cells were diffusely distributed throughout the stroma with areas of hemorrhage, few chronic inflammatory cells, and many dilated RBC filled capillaries. 3. Cysts-like spaces were also evident in certain areas which were lined by cellular connective tissue wall suggesting both Central Giant Cell Granuloma and aneurysmal bone cyst-like appearance
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(a)



(b)

<p style="text-align: center;">Treatment</p>	<ol style="list-style-type: none"> 1. resection of right ramus condylar unit of mandible followed by reconstruction with costochondral grafting was planned. 2. The decision of resection was taken given the extensive bony involvement and multiple cortical bone perforation.
<p style="text-align: center;">Surgery</p>	<ol style="list-style-type: none"> 1. A seven-centimeter-long extraoral submandibular incision was given along the neck crease. 2. the inferior border of the mandible was exposed. 3. Upon reflecting masseter and the periosteum, the surgically exposed bone showed ballooning and had a brownish hue. 4. The inferior border of the angle of the mandible and ramus were involved. The bony lesion was resected, into healthy bony limits 5. Dark reddish or brownish granulation tissue was found, but it was not hemorrhagic. 6. The excised lesion leads to loss of a large segment of the mandible which caused disfigurement of the face. 7. Elastic intermaxillary fixation was done for guiding the mandible. 8. This facilitates the adequate establishment of occlusion postoperatively and helps in the appropriate orientation of the remaining jaw bone to the placement of the graft for rehabilitation.

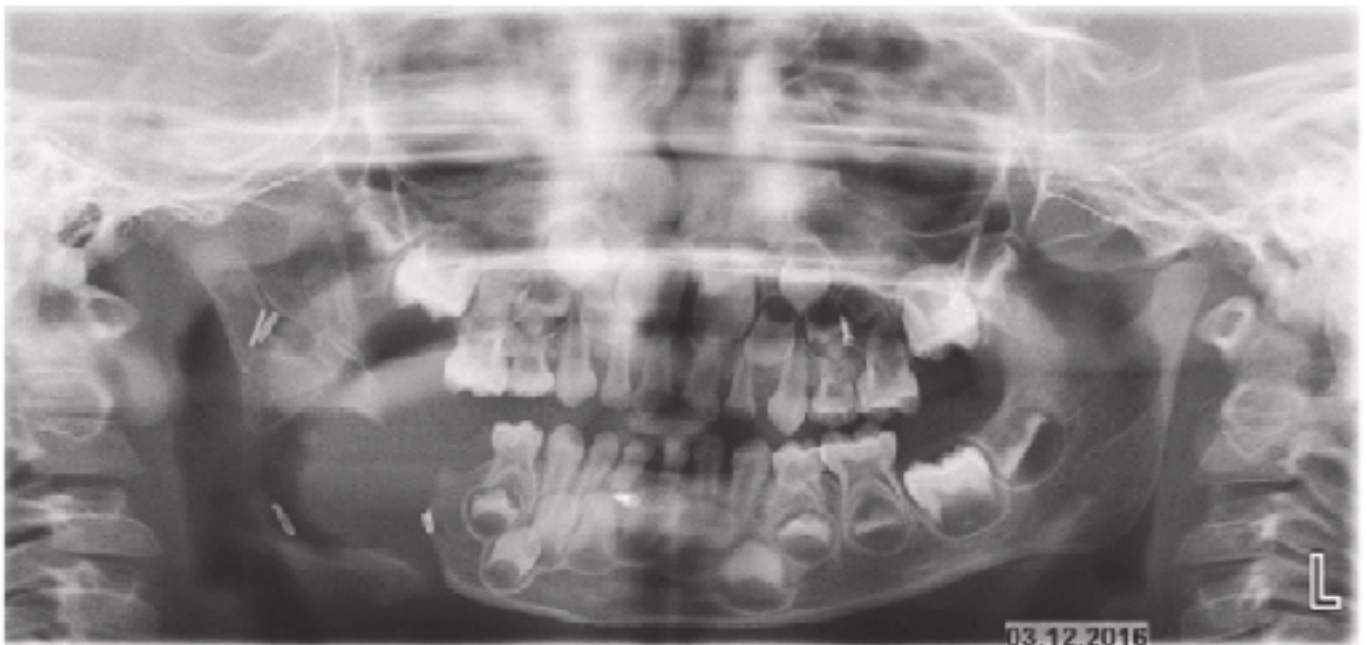


FIGURE 4: Intraoperative picture showing excised mass.

<p>Prognosis</p>	<ol style="list-style-type: none">1. Postoperatively the patient was on follow-up for 18 months2. Recent OPG revealed spontaneous regeneration of mandible.
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FIGURE 5: Postoperative photograph.



Discussion	
<p>If one can categorize the swellings into groups based on the site of lesion, progression, and onset and duration of swelling, then a correct differential diagnosis can be obtained</p>	
<p>Acute swelling with inflammation and pain</p>	<ol style="list-style-type: none"> 1. lymphadenitis 2. odontogenic infection 3. skin abscess 4. sinusitis.
<p>Nonprogressive</p>	<p>congenital anomalies like :</p> <ol style="list-style-type: none"> 1. cephalocele 2. dermoid 3. epidermoid cyst
<p>Rapidly progressive</p>	<p>pediatric tumors like :</p> <ol style="list-style-type: none"> 1. rhabdomyosarcoma 2. Langerhans cell histiocytosis 3. Ewing’s sarcoma 4. Osteogenic sarcoma 5. Metastatic neuroblastoma
<p>Slowly progressive</p>	<ol style="list-style-type: none"> 1. Neurofibroma 2. Hemangioma 3. Lymphangioma 4. Vascular malformation 5. Fibroosseous lesions. <p>Pathology of infective origin may also present as a slowly progressive swelling as in cases of Garre’s osteomyelitis.</p>
<p>Fibro-osseous diseases</p>	<ol style="list-style-type: none"> 1. It represent a diverse group of entities. 2. They commonly include lesions of primary or secondary hyperparathyroidism 3. Includes cherubism, Central Giant Cell Granuloma, and aneurysmal bone cyst.
Differential Diagnosis Thinking Pathway	
<ol style="list-style-type: none"> 1. Bony hard swelling with normal overlying skin color and normal cutaneous and subcutaneous echotexture on ultrasonography rule out : Neurofibroma, hemangioma, lymphangiomas, and vascular malformation. 2. multiloculated “soap bubble appearance” : rules out: Intra-osseous variants of vascular malformation and hemangiomas. 3. The absence of any intra-oral infectious foci rules out : Osteomyelitis or similar chronic infectious lesions. 4. The normal values of serum calcium, phosphorus, and alkaline phosphatase along with unilateral presentation rules out : Cherubism or fibrous dysplasia. 	

<p>Central Giant Cell Granuloma</p>	<ol style="list-style-type: none"> 1. Radiographic “ballooning” of the ramus of mandible and “soap bubble appearance” <p>But</p> <ol style="list-style-type: none"> 2. predominantly found in children and young individuals but has not been commonly reported in a child as young as our patient. 3. The coronoid and condylar process is rarely involved by the lesion <p>Still</p> <p>The histopathologic examination in our case suggested the presence of both CGCG and ABC.</p>
<p>CGCG Tx</p>	<ol style="list-style-type: none"> 1. surgical excision either by curettage or en bloc resection depending on the behavior 2. Other treatment options include drugs like Denosumab systemic injections of calcitonin and interferon and radiation. 3. these drugs have frequent local or systemic side effects such as osteonecrosis and growth deficiencies 4. Because of high recurrence rate of up to 70% after local curettage wide excision of the lesion is preferred as the choice of treatment
<p>Prognosis</p>	<ol style="list-style-type: none"> 1. The recent follow-up of our case revealed spontaneous regeneration of bone. 2. This kind of regeneration is explained due to the presence of intact periosteum and its osteogenic potential in children.
<p style="text-align: center;">Conclusion</p>	
<ol style="list-style-type: none"> 1. Usually CGCG and ABC are seen with higher female predilection but in our case, it was seen in a very young boy and in unusual site with involvement of coronoid and condylar process. 2. With this kind of unusual presentations, the clinician should always bear differential diagnosis in mind while examining bony swelling in head and neck region in children. 3. With the evidence of spontaneous regeneration of resected portion of the mandible in our case, we suggest that when considering reconstructive options in such aggressive lesion of the jaw in children one must keep the host’s growth potential in mind. 	

題號	題目
1	Which one is true of Central giant cell granuloma ?
	(A) Usually happens on patient older than 60 y/o
	(B) Usually happens on male patient than in female patient
	(C) Microscopically, multinucleated giant cells are present throughout the connective tissue, and they may be seen in patches or evenly
	(D) Denosumab and systemic injection of calcitonin and interferon are usually first choice of treatment
答案(C)	出處：Oral pathology clinical pathologic correlations, sixth edition.
題號	題目
2	Which one is true of Aneurysmal bone cyst ?
	(A) Usually happens on patient after their fourth decade
	(B) Radiographically, usually with unilocular radiolucency
	(C) Differential diagnosis point between central giant cell granuloma and aneurysmal bone cyst is at the indentification of sinsusoidal blood spaces within the tumor mass.
	(D) A firm and non-pulsatile swelling is a common clinical sign.
答案(C)	出處：Oral pathology clinical pathologic correlations, sixth edition.