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Multiple dentigerous cyst of the jaw – a case study

The study described a rare case of multiple dentigerous cysts originated from third molar teeth bud. Dentigerous cysts of upper third molar teeth have been treated by dual stage cyst scoop-out operation. Dentigerous cyst according to Pintborg and Kramer classification belongs to odontogenic cysts of the jaw region which are always associated with the permanent teeth bud. They more often appear in the mandible than in the maxilla region. In the mandible they are usually connected with the third molar and the second premolar, in the maxilla with the canine and third molar teeth (4). Cases of dentigerous cysts growing equally from the region of all four third molar teeth are very rare. The treatment of cyst is based on operating methods described a long time ago. In most cases, treatment is based on single stage cystectomy. Giant odontogenic cyst of the jaw because of large size and possibilities of traumatization of the anatomical structure during cystectomy or risk of pathological fracture of the bone would need distinct treatment (5). In these cases surgical procedure is based on dual stage cyst scoop-out cystectomy. In the first stage cyst decompression and marsupialization are obtained. In the second stage, after strengthening of the bone structure, the surgical procedure of total cystectomy is carried out (4, 5, 8). Selection of treatment methods mainly depends on the type, size, localization, age and condition of the patients.

In the Department of Maxillofacial Surgery, Medical University of Lublin, the majority of odontogenic cysts are treated by single-stage cystectomy. Only in rare single cases of large cysts causing bone destruction dual stage cyst scoop-out operation has been performed (2). In our study we present a case of large multiple dentigerous cyst of the jaw.

MATERIAL AND METHODS

The patient J.R (age 20) was referred to the Department of Maxillofacial Surgery in Lublin because of bilateral deformation of the jaw and mediocre pain symptoms. Oral examination revealed soft-elastic deformation of soft tissue bilaterally in the region of the mandible triangle and frontal sinus wall covered by not pathologically changed mucosa. Radiological documentation based on orthopantomogram and sinus RTG showed large lesions bilaterally in the area of the mandible triangle and also both maxillae. In the centre of the entire lesion third molar buds have been seen (Figs. 1–3).



Fig. 1. Orthopantomogram, September 2000

In order to evaluate the size of the lesion, especially in the maxilla the patient had computer tomography of the region. CT scan showed cyst like lesion with teeth buds bilaterally causes maxilla bone remodelling and in large area expression of the cyst in maxillary sinuses.



Fig. 2. CT scans of J. R. September 2000



Fig. 3. CT scans of J.R., September 2000

Based on clinical and radiological examination the surgical treatment was divided into: 1) total cystectomy of bilateral mandible lesion, in the mandible and marsupialization of the lesion in the maxilla, 2) cystectomy in the maxilla in the second stage. In September 2000 the patient underwent surgical procedure in total anaesthesia. From intraoral approach a part of the mandible in which cysts were located, was exposed. Lesion from the corpus and ramus of the mandible have been removed totally. Also marsupialization of maxillary cysts has been obtained during surgery. The removed material was sent for histopathological examination which confirmed the previous diagnosis as *Cystis dentigerous*. After surgical treatment the patient has been treated a follow-up examination in outpatients' clinic. In December 2000 and March 2001 the patient underwent CT examination. In both follow-up CT scans showed remodelling and strengthening of the maxilla bone structure. Also another CT examination made in August 2001 confirmed the process of bone remodelling.



Fig. 4. Orthopantomogram, December 2000



Fig. 5. CT scans, December 2000, status post cystectomy in the area of the mandible and decompression of cyst in the maxillary region with present regeneration of the bone structure



Fig. 6. CT scan, March 2001, showed remodelling of the maxilla bone structure

Next surgical procedures were performed in June 2001 as total cystectomy within the maxilla. The removed tissues have been histopathologically examined. The examination also showed *Cystis dentigerous*. The healing process after surgery went without complications. Follow-up examination showed proper bone remodelling after performed surgery (Fig. 5).



Fig. 7. Status post total cystectomy performed within the mandible and the maxilla

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SUMMARY

Dentigerous cysts growing equally from the four third molar buds are very rare. Large size of the cyst can create treatment problems. Two-stage cystectomy has become the accepted procedure of choice, especially because of significant destruction of bone by large size of dentigerous cysts. It has also reduced risk of complication, especially pathological fractures. The size of the cysts decreases after decompression. Lack of pressure on bones promotes reconstruction of the bone. In both clinical procedures the most important fact is that cyst should be removed totally and should undergo histopathological examination because of possibilities of neoplastic metaplasia within the region.

Mnogie torbiele zawiązkowe kości szczęki i żuchwy – opis przypadku

W pracy przedstawiono rzadko spotykany przypadek mnogich torbieli żuchwy i szczęki, pochodzących od zawiązków trzecich zębów trzonowych. W odniesieniu do torbieli szczęk zastosowano dwuetapową metodę leczenia ze względu na znaczną destrukcję struktur kostnych. Postępowanie to zmniejszyło ryzyko powikłań, między innymi patologicznego złamania. Torbiele w obrębie żuchwy usunięto jednocześnie.