

Planocellular Carcinoma in a Mandibular Cyst

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Summary

An unusual case is presented of a patient with planocellular carcinoma of the mandible which developed through transformation of the epithelium of an odontogenic cyst. The transformation of the epithelium of the cyst into a planocellular carcinoma was histologically verified. Apart from a swelling on the chin there were no other signs of disease in the clinical status. After histological verification of the tumour a wide excision of the skin of the chin and part of the lip was performed, segmental resection of the mandible and selective dissection of both sides of the neck. The skin defect was reconstructed by local rotating flaps and the mandible by a microvascular flap from the fibula.

Key words: Mandible, carcinoma in an odontogenic cyst, reconstruction, fibula flap.

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Introduction

Malignant alterations of the epithelium of odontogenic cysts are rare. Alterations of the epithelium have been described in all types of odontogenic cysts, although rare presentations exist which satisfy criteria for malignant transformation (1). The occurrence of planocellular carcinoma in an odontogenic cyst is impossible to confirm if the transformation of the cystic epithelium into carcinoma is not histologically determined.

Patient presentation

A 45-year-old patient was referred to the Oral Outpatient Department because of a swelling in the area of the chin, which had persisted for several

days. Swelling was found intraorally in the medial part of the lower vestibule, with no defects of the mucous membrane or signs of inflammation. The teeth were carious. An orthopan tomogram showed a cystic formation in the mandible, located in the space between the first molars. After preoperative examination the patient was subjected to standard cystectomy. The intraoperative finding showed that the cystic cavity was partially filled with solid tissue. The whole content of the cyst was sent for histological examination (Figure 1). The histological finding showed that it was planocellular carcinoma. A further examination by the pathologist ascertained transformation of the odontogenic epithelium of the cyst into carcinoma (Figure 2). In a second operation a wide local excision was made which included the skin of the chin, full thickness of the medial part of the lower lip, segmental resection of the mandible

from angulus to angulus and selective dissection of both sides of the neck (Figure 3). The mandible was reconstructed by a microvascular flap from the fibula (Figure 4a) while the skin of the chin and lower lip and the frontal part of the vestibulum were reconstructed by a rotational flap from the cheek in combination with nasolabial flaps (Figure 4b). The histological finding did not show signs of a tumour in the mandible, lymph nodes of the neck or mandibular nerves, which were sent to pathology separately. Postoperatively the patient was treated by a full tumour dose of radiation therapy.

Discussion

Odontogenic cysts can have various origins, and although the majority of them are benign, all can be the source of malignant transformation (2-4). The incidence of malignant transformation is uncertain. Frolich reported that it could amount to one in a million cases. In 1969 Gardner (5) reviewed all histological findings of cases of planocellular carcinoma in an odontogenic cyst, published in the literature from 1889 to 1967. Of the 63 published cases only 25 were well documented. Bradley and coworkers reported that from 1975 to 1988 10 new cases were published (6). The incidence of intraosteal carcinomas which arising through transformation of the epithelium of an odontogenic cyst is estimated to be 1-2% of intraoral carcinoma (7). In our literature one case has been described of carcinoma in a radicular cyst of the mandible (8). Macan and coworkers stress that apart from carcinous altered

cystic epithelia, metastatic carcinoma, extension of carcinoma from the surrounding soft tissue, malignant transformation of odontogenic epithelium and ameloblastoma can differentially diagnostically be considered. Cystic degeneration of primary intraoral carcinoma can also be considered, and an odontogenic cyst and intraoral carcinoma can also develop in the immediate vicinity (9).

The etiology of malignant transformations is unknown, although as a possible cause chronic inflammation has been mentioned and hyperplasia of the epithelium as a result of pressure from within the cyst. The majority of malignant tumours arising from odontogenic cysts are moderately or well differentiated planocellular carcinomas, which can occur in any part of the mandible (10-12). The disease can occur at any age, although 75% occur between the ages of 50 and 90 years. Men are affected twice as often as women are, and the disease is more frequent in the mandible than the maxilla. Tumours in the mandible frequently spread via the mandible nerve. Inflation of the mandible, swelling of the soft tissue and pain are the most frequent signs. Other clinical signs are perforation of one or both cortexes of the bone, rapid growth, slow healing and increased swelling after tooth extraction, shifting of the teeth, paresis and metastasis in the regional lymph nodes of the neck. Radiographically carcinoma can be suspected if the edges of the cyst are uneven or rough. Wide excision and dissection of the neck and simultaneous reconstruction is the therapy of choice. Local recurrence is the most frequent cause of failure. Metastases in the region of the lymph nodes of the neck occur in 5% of patients (13).