CONSERVATIVE SURGICAL MANAGEMENT OF AMELOBLASTOMA OF THE MANDIBLE – REPORT ON THREE CASES

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SUMMARY

Features of the typical ameloblastoma of the mandible are outlined. Three cases managed by conservative surgical treatment maintaining the continuity of the mandible are described. The factors taken into consideration when instituting this method of treatment are discussed. Results obtained are encouraging.

INTRODUCTION

The ameloblastoma is an odontogenic neoplasm believed to have arisen from the dental lamina or its derivatives. It is usually detected between 20-50 years of age. There is no sex predilection. It has a predilection for the mandible rather than for the maxilla. In the mandible it is found predominantly in the molar region. In Nigerians, the tumour is more commonly located in the symphyseal and premolar regions of the mandible.

Radiographically, it may present as either unilocular or multilocular radiolucency. Sonesson stressed the significance of a patchy sclerosis of the periphery and bony septa of an ameloblastoma. It may be associated with an unerupted tooth. Root resorption of the involved teeth usually occurs.

Clinically, the typical ameloblastoma appears insidiously as a slow growing central tumour of the jaw. As it grows, it destroys the bony jaw and induces cortical expansion both linguually and labially in the mandible. Once the bony cortex is eroded, it appears as a soft tissue fleshy growth.

In the past, ameloblastoma which was treated by simple enucleation had a high recurrence rate of 50-100% probably due to incomplete removal. Consequently block resection of the jaw became popular to achieve a cure for this locally aggressive tumour. Kramer provided the clue to the rational approach to this tumour when he demonstrated that the ameloblastoma invades medullary bone readily but only erodes cortical bone. This means that the clinical and radiographic extent of the tumour is the true limit of the tumour in cortical bone. Following this histopathological finding, attempts at conservative surgical treatment of the ameloblastoma preserving the continuity of the lower border of the mandible has gained popularity.

REPORT OF CASES

Case 1

A 14-year-old Malay girl was seen on 30.6.82 with a complaint of a fleshy growth of 1.5 cm diameter in the buccal sulcus of 36. The patient was first seen on 9.11.79 with a complaint of a swelling of the left mandible at the molar region. The lesion was diagnosed histologically as a...
Case 1

A 43-year-old Malay lady was seen on 14.12.79 with a complaint of a swelling in the left side of the face. The patient noticed the swelling four years ago in Perlis and it was suggested to him that the jaw be resected by a hemimandibulectomy operation followed by grafting the defect with a hip graft. According to the patient, the lesion was diagnosed four years ago in Perlis and it was suggested to him that the jaw be resected by a hemimandibulectomy operation followed by grafting the defect with a hip graft. The patient rejected the proposal. The biopsy report was traced and it confirmed the patient's history.
Fig. 4 18 months post-operative radiograph showing good bony deposition in the region of the mandible from which the ameloblastoma was removed (Case 2).

Fig. 5 Preoperative panoramic radiograph showing multiloculated radiolucency from 43 to the right sigmoid notch (Case 3).

Extraoral examination revealed a bony swelling on the right side of the mandible. The overlying skin was normal. Submandibular lymph nodes were palpable, mobile and non-tender. Intraoral examination revealed a swelling due to expansion of both buccal and lingual plates extending from just beneath the right sigmoid notch to 43. The overlying mucosa was normal except in the region of 46 where the tumour tissue had perforated through the cortical bone. Radiographic examination showed a large multiloculated radiolucent area from the sigmoid notch to 43. The apices of 43, 43 were resorbed and 48 was present (Fig. 5).

The patient was admitted to hospital on 26.4.83. Past medical history, physical examinations and laboratory investigation were within normal limits. Patient was operated on 28.4.83. A marginal resection of the right mandible from the sigmoid notch to 43 was done and the tumour with 48 was enucleated from the lower border of the mandible. The exposed inferior alveolar neurovascular bundle lying on the surface of the bone was excised from the mandibular foramen to the mental foramen. Three circular soft tissue pockets showing through the inferior border of the mandible were burred with a vulcanite bur. The exposed bony surface was run over meticulously with a vulcanite bur. The wound was packed with 3 cm ribbon gauze soaked in Whitehead's varnish. The pack was changed twice at three weekly interval. No recurrence was detected clinically six months postoperatively. Radiographic examination showed the mandibular defect to be filling up with bone (Fig. 6).

DISCUSSION

The typical ameloblastoma is a locally invasive odontogenic tumour that does not metastasise. Conservative surgical treatment aims at eradicating all tumour tissue and is a very attractive alternative to mutilating resection of the jaw. There is a spectrum of conservative surgical treatment for ameloblastomas of the jaws. The choice would depend on a number of variable clinical factors like the size of the lesion, site of the lesion, age and temperament of the patient, follow-ups and recurrences.

In case 1, the lesion was detected two years subsequent to a marsupialisation of a dentigerous cyst in the same region. Ameloblastoma is a very rare odontogenic tumour in children under 15 years of age. As the lesion was small, only the bony region affected by the tumour was removed. This method of treatment did not jeopardize the condylar growth centre and the periosteal growth of mandible. At 14 months follow-up postoperatively, no facial asymmetry except for the loss of 45, 46, 47, 48 and no recurrence was detected.
In the second case, the lingual and buccal cortical plates were preserved as advocated by Crawley and Levin.\textsuperscript{9} The inferior alveolar neurovascular bundle was left intact. At 18 months follow-up postoperatively no recurrence was detected and the mandible had remodelled itself.

The third case was a very large ameloblastoma affecting almost the whole side of the right mandible. Radiographic findings indicated the presence of sound cortical bone maintaining the continuity of the right mandible. The fact that the patient absconded when it was suggested to him that his jaw be resected four years ago, the current trend away from jaw resection for ameloblastoma, his tumour was cystic and not of the solid type persuaded us towards conservative surgical treatment as the first initial treatment. Histologically tumour tissue was found on the surface of the resected coronoid process but not invading into the bone depths. Although it is said that ameloblastoma does not invade soft tissue until a late stage, the inferior alveolar neurovascular bundle was resected because tumour tissue might be stuck to it. Histopathological findings confirmed our suspicion. The tumour cells had penetrated the perineural tissue (Fig. 7). In retrospect, the soft tissue pockets showing through the lower border of the mandible could have been better treated by electric cautery. No recurrence was detected six months postoperatively.

All three patients are resident in Kuala Lumpur. Thus regular follow-up is possible. It is imperative to recall these patients at regular intervals for a period of 25 years as ameloblastoma had been reported to recur 25 years postoperatively.\textsuperscript{15}

According to Waldron,\textsuperscript{16} recurrence after curettage does not necessarily imply failure because these recurrences are usually small and could be treated conservatively. Non-conservative surgery on the original large lesions would have been more mutilating.

These are cases of ameloblastomas of the mandible that had not been treated before until now. Ameloblastomas of the maxillae especially when they are found in difficult surgical regions are treated more aggressively on initial diagnosis. Sedhev\textit{ et al.}\textsuperscript{17} stressed the problems encountered in ameloblastoma in inaccessable surgical sites in the maxilla.

The results obtained in the light of this experience are promising. Conservative surgical treatment of the typical ameloblastoma of the mandible is a strong contender as the first line of treatment in selected cases. We hope to provide more convincing results at a later date with more cases and longer periods of follow-up.

REFERENCES

11. Gorlin R J. The pathology of ameloblastomas and its


