

Short reports

Solitary plasmacytoma of the trachea treated by loop resection and laser therapy

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ABSTRACT A 53 year old woman with respiratory failure and stridor caused by a tracheal plasmacytoma was treated by endoscopic loop polypectomy and neodymium YAG laser therapy, followed by local irradiation. Two years later there was no evidence of recurrence of disease.

Extramedullary plasmacytomas are uncommon tumours that affect widely varying tissues. In the respiratory tract most arise in the upper airways; primary tracheal lesions are rare.^{1,2} We report a case of tracheal plasmacytoma successfully treated by bronchoscopic polypectomy and neodymium YAG laser therapy followed by local irradiation.

Case report

A 53 year old woman was admitted to hospital with respiratory failure, inspiratory stridor, decreased breath sounds, and fever. She had been treated for asthma for three years with bronchodilators but over the preceding 15 days her respiratory symptoms had worsened. She had smoked 20 cigarettes a day for 30 years and had lost 20 kg in three years.

At emergency fiberoptic bronchoscopy numerous polypoid nodules 2-5 mm in diameter were seen in the tracheal mucosa, and 2 cm above the carina there was a larger lobulated mass occluding 75% of the tracheal lumen. An endoscopic loop polypectomy was performed, followed by two applications of neodymium YAG laser therapy to the larger mass. After these procedures there was immediate symptomatic relief.

Histopathological and immunoperoxidase studies of the larger mass showed a plasmacytoma with an IgG and lambda

light chain monoclonal secretory pattern. The smaller lesions showed a non-specific inflammatory pattern but residual tumour infiltrating the tracheal wall was found in biopsy specimens taken after laser therapy. Further investigations, including a full blood count, serum protein electrophoresis, and estimation of serum calcium, gave normal results, and no Bence-Jones proteinuria was detected. Bone marrow examination and radiological and radioisotope skeletal surveys indicated that the tumour was confined to the trachea. In view of these findings the patient underwent a course of mediastinal radiotherapy (4000 cGy). Two years later she had regained weight and there was no evidence of any recurrence of disease. Sequential tracheal biopsies performed during this period showed no disease.

Discussion

Plasmacytoma is a relatively uniform proliferation of plasma cells, producing either a circumscribed mass, a diffuse infiltration, or both, usually with a monoclonal secretory pattern. Clinically there are five modes of presentation—multiple myeloma, solitary plasmacytoma of bone, extramedullary plasmacytoma, plasma cell leukaemia, and premyleloma.²

Extramedullary plasmacytomas arise in soft tissues and form 8% of all plasma cell neoplasms.³ They may occur at almost any site: tumours of the respiratory and gastrointestinal tracts, lymph nodes, conjunctiva, pleura, thyroid, ovary, testis, kidney, and skin have all been reported.^{1,2} Although most respiratory plasmacytomas arise in the upper airways, they are rarely seen in the trachea.^{1,2} Only seven of the 54 intrathoracic plasmacytomas reported in 1965 by Herskovic *et al*⁴ were tracheal; the others originated in bone, lung, pleura, bronchus, and lymph node. Since then four further cases have been reported,⁵⁻⁸ bringing the total to 11. In eight of these patients the tumour was confined to the trachea. In the remainder disease was also present in the bronchi,⁴ larynx,⁶ or nasopharynx.⁷

Because of their rarity the optimum treatment of extramedullary plasmacytomas has not yet been determined. Surgery and radiotherapy, alone or in combination, have been used most commonly, chemotherapy being reserved for

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disseminated disease.^{2,3} Tracheal tumours can be approached surgically by a transtracheal or an endoscopic route, but when airway obstruction is severe endoscopic loop resection or electrocoagulation (or both) is the treatment of choice.⁹ Recently, several different types of tracheal tumour have been treated successfully by neodymium YAG laser therapy via a flexible endoscope,⁹ but we are not aware of its use for plasmacytoma. Although loop resection and laser therapy relieved the respiratory distress in our patient, residual tumour was present in the tracheal wall. As plasmacytomas are radiosensitive^{2,3} she was given radiotherapy.

Evaluation of the response of extramedullary plasmacytoma to treatment is difficult because of the variety of methods used and the short follow up of many published cases. Local recurrence occurs in nearly 30% and dissemination in 15–40% of patients.^{2,3} Among the eight reported cases of tumour confined to the trachea, no information about treatment was given in two,⁴ two received radiotherapy alone, and four underwent surgical resection.^{4,5,8} Only two were followed up for more than one year: one was disease free at five years and the other was alive at 25 years despite multiple recurrences.⁶ The favourable postoperative course of our patient suggests that a combination of endoscopic resection, neodymium-YAG laser therapy, and local irradiation is a safe and effective treatment for this rare neoplasm.

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