Chondrosarcoma of larynx

By P. R. De (West Bromwich)

Cartilaginous tumours of larynx are uncommon. Travers reported a case to the Medico-Chirurgical Society in London in 1816, and a cartilaginous tumour of larynx was first described by Heusinger in 1822. The first case report was published by Froiep in 1834. To date, about 125 cases of cartilaginous tumours of larynx have been reported.

Aetiology.—The aetiology of the cartilaginous tumour of larynx is not known but the following suggestions have been put forward:

(i) Chondroplastic predisposition of branchial tissue to chronic inflammation.

(ii) Moore suggested abnormalities in ossification of laryngeal cartilages.

Sex.—Laryngeal cartilaginous tumours are four times more common in males than females.

Age.—Most tumours occur between the ages of 40 and 60 years; however, the youngest and oldest reported patient was 15 years and 91 years respectively.

Site.—The cartilaginous tumours of larynx involves the cricoid cartilage in 70 per cent of cases and thyroid cartilage in 20 per cent of cases. They also involve the arytenoid and epiglottic cartilages.

Radiographic signs.—Radiogram of the larynx show calcification of these tumours in 80 per cent of cases.

Histopathology.—Histologically, chondromas remain the same type of cartilage as their source. These tumours may undergo calcification, ossification, mucoid degeneration or malignant transformation.

Virchow's criteria for malignancy are:

(*a*) Three to four multinucleated cells (high, dry field),

(*b*) Large, plump nuclei.

(*c*) Increased cellularity.

(*d*) Acidophilic staining nuclei.

Both benign and malignant cartilaginous tumours of the larynx may recur in three to sixteen years requiring re-operation. Local and distant metastasis of the chondrosarcomas are rare (Barsocchini and McCoy).

Report of a case of chondrosarcoma of larynx

C.W., aged 64 years, white male, who has been employed in the iron industry for forty-six years and aluminium industry for four years, complained of dyspnoea of some three years' duration which increased in the last ten weeks prior to being seen at the out-patient department, becoming worse for three weeks prior to admission to hospital on 30 March 1970. He has also had hoarseness of voice for two years prior to his admission in hospital.

On examination his general condition was good. No neck glands were

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palpable. Indirect laryngoscopy showed both cords were very sluggishly mobile but no obvious growth was seen.

At direct laryngoscopy both vocal cords were found fixed with a small rima glottidis and firm arytenoid area.

At oesophagoscopy no abnormality was found.

Bronchoscopy was not possible because the bronchoscope could not be passed through the glottis. A prophylactic tracheostomy was performed.

On 8 April 1970 a retrograde laryngoscopy was performed through the tracheostomy opening and a growth was seen in the subglottic area. The biopsy report of the growth was as follows:

> 'Section shows oedematous, structureless material in which many colonies of bacteria and yeasts are present. There are also numerous filamentous forms, perhaps of streptothrix type, possibly true fungi.'

A culture of the above tissues showed growth of *Candida albicans* after two weeks incubation.

There was no progress in the condition of the patient. On 30 April 1970 a laryngofissue and frozen section was performed with a view to having a deep biopsy of the growth as the previous biopsy report was not convincing and also to undertake a total laryngectomy if the frozen section revealed any malignancy. However, the laryngofissue showed a soft, friable non-haemorrhagic granulation tissue infiltrating the whole thyroid and cricoid cartilage. Histology report was as follows:

> Section shows a piece of normal cartilage with defective epithelial covering. There is a heavy exudate, apparently containing fungous material. No evidence of malignancy.

Other investigations

Haematological investigations were normal and serological investigations, i.e. WR and Kahn and chest radiograph were all normal. Liver and spleen were also not palpable.

Meanwhile, the patient was being treated with Amphotericin B (in view of the histological report of fungal infection), being regularly controlled by haematological investigation.

A tomogram of the larynx performed on 5 May 1970 revealed a mass and expansion on the right side. Clinically, a malignancy was always suspected and this view was strengthened by the corroborative evidence of the infiltration of the whole of the thyroid and cricoid cartilage. There was no improvement by treatment with Amphotericin B, nor was the report of fungal infection very convincing.

On strong clinical grounds a laryngectomy was performed and the gross pathological report was as follows:

> 'The larynx had been opened in front well below the vocal cords.
>
> 'I have now opened the larynx from the back. There is a large cartilaginous mass at least 30 mm. in diameter, arising in the laryngeal cartilage and mainly situate in the right side and posteriorly. It appears to be infiltrating across the midline.'

The histology was reported as follows:

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'Section shows a chondrosarcoma, apparently previously encapsulated, but now with clear evidence of infiltration of the capsule.'

Postoperative.—The patient is being reviewed in out-patients. There is no recurrence of tumour.

Summary

A case report of an uncommon malignant tumour of larynx has been presented. The diagnosis was difficult because no obvious growth was seen on indirect or direct laryngoscopy as the growth was on one side of the larynx with subglottic extension leading to fixation of the cords. It was all the more difficult because of superadded fungal infection which has been repeatedly reported in histology without indicating any malignancy. Retrograde biopsy, tomograms and failure of improvement by treatment with Amphotericin B led to the decision to perform a laryngectomy which finally confirmed the diagnosis.

Prognosis

Since local recurrence and distant metastasis of the cartilaginous tumour of larynx is rare the prognosis should presumably be good. In this particular case the patient is doing very well sixteen months after operation.

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