Acute thyroiditis with gas formation

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Acute thyroiditis is a rare disease. Suppuration and abscess formation is an important complication, but it is uncommon. Gas-forming infection of the thyroid gland is extremely rare (Joffe and Schamroth, 1966). The following case with a huge accumulation of gas and fluid in the neck as a result of thyroiditis is therefore worthy of record.

Case report

S.B., a male Negro worker, aged 49 years, was admitted to hospital with a huge swelling in front of the neck, dyspnea and dysphagia. The patient stated that twenty days earlier, on getting up from bed, he first noticed a tender swelling in the anterior aspect of his neck. In a few days the swelling increased gradually in size with accentuation of neck pain and occurrence of productive cough. Gradually he started to feel a change in his voice, dyspnea and dysphagia for solids. There was no history of trauma or any previous swellings in the neck.

On examination, the patient looked exhausted and unable to turn his head. Temperature was 102 degrees fahrenheit, pulse 100/minute and blood pressure 130/85. Ptosis was evident in the right eye (Fig. 1). The tongue was furred but otherwise the oral cavity was free. The swelling in the neck was found to extend from the submandibular region to the suprasternal notch; laterally, both sides were also involved but reached more posteriorly on the right side (Fig. 2). The skin over the swelling was stretched and glistening. On palpation, the skin was warm and marked tenderness was elicited. Definite fluctuation was found. Indirect laryngoscopy revealed sluggish mobility of both vocal cords but no signs of inflammatory or obstructive lesions were found. The laryngeal axis was shifted to the left. The abdomen and nervous system were free. In the chest, coarse crepitations were detected over the right lung. There was no clinical evidence of thyroid dysfunction.

Radiographs of the neck showed the presence of a huge soft-tissue shadow in the neck with a large collection of gas anterior to and more to the right of the trachea which was displaced to the left (Figs. 3 and 4). At the lower border of this gas collection there was an air-fluid level. In the cervical spine mild degenerative changes were seen, maximal at C 6/7 level, where the disc space is narrowed. Chest radiographs revealed a pneumonic focus in the medial segment of the right middle lobe. The heart was not enlarged but the aortic knuckle was prominent.

The bad general condition of the patient and the radiological findings necessitated immediate surgical interference. After ethyl chloride spray over the swelling, a collar incision was made in the middle of the neck. Gas escaped, followed by a huge amount of foetid thick creamy purulent material. Digital exploration of the cavity showed it to extend around the larynx, trachea and oesophagus on both sides, but more posteriorly on the right. Two corrugated

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rubber drains were inserted inside the cavity and a firm bandage applied to the neck. In the evening the patient got some difficulty in respiration. Indirect laryngoscopy at that time showed the vocal cords with sluggish mobility. A few days later bilateral complete abductor paralysis became evident with the vocal cords fixed in the paramedian position.

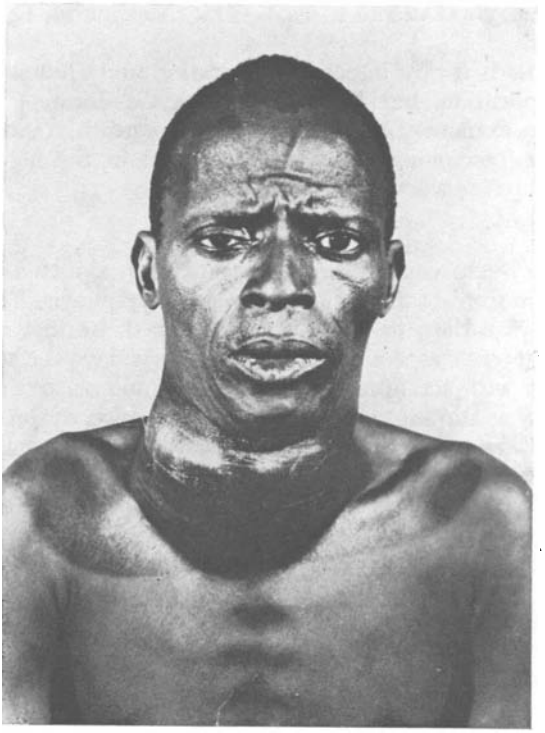


FIG. 1.

Swabs from the discharge at the time of incision were submitted for bacteriological examination. The cultures showed numerous pus cells but failed to show any growth of organisms. Cultures taken later from pus drained from the incision in the ward showed 'heavy growth of klebesilla SPP'. A course of penicillin and streptomycin was started intramuscularly every twelve hours. Radiographs of the neck two days after the incision showed marked reduction in size of the cavity (Fig. 5). On daily dressings, the rubber drains were shortened gradually and in eight days the wound healed by secondary intention. The general condition was much improved and the chest infection controlled. The patient was cured and discharged after three weeks with perfectly mobile vocal cords.

Discussion

Acute thyroiditis is an uncommon condition. It may subside or proceed to suppuration and abscess formation. Few cases of acute pyogenic thyroiditis have been described before (Joffe and Schamroth, 1966). Acute suppurative thyroiditis may occur at any age and in either sex. It is most common, however,

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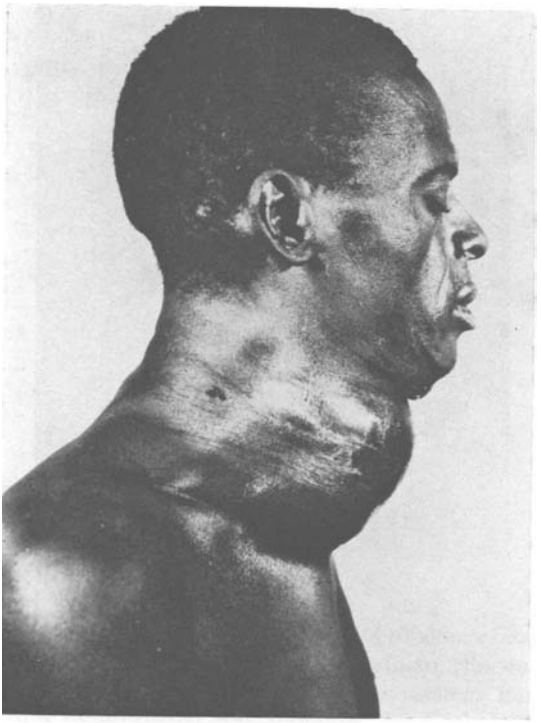


FIG. 2.

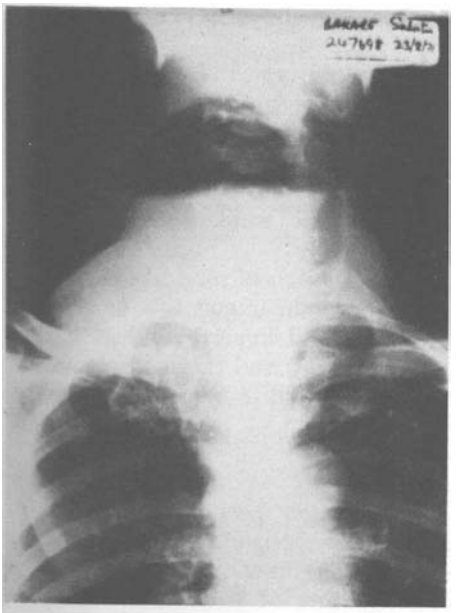


FIG. 3.

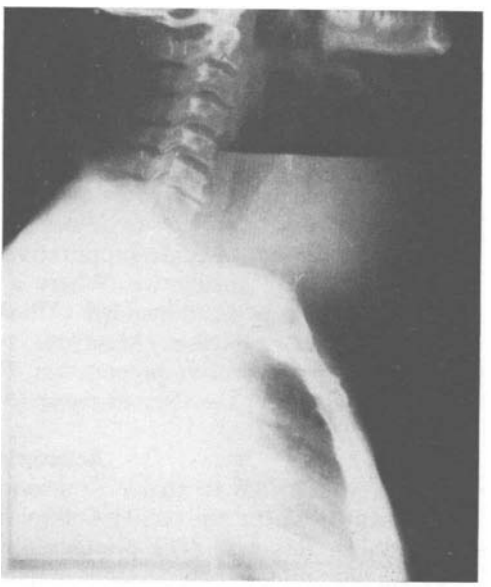


FIG. 4.

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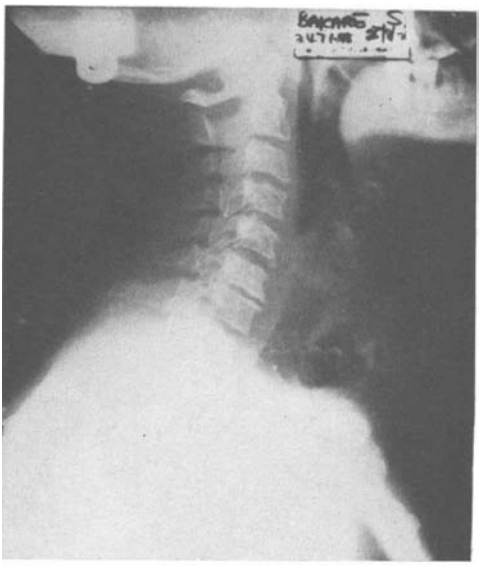


FIG. 5.

in adult females and seems to have a predilection for the Negro race (Altemerer, 1950). Infection usually reaches the gland *via* the blood stream or lymphatics. The most common causative organisms are streptococci, staphylococci and pneumococci, although B.coli, typhoid and paratyphoid infections have also been reported. Infection of the respiratory tract is a frequent precursor. The presence of pre-existing disease of the thyroid gland in the form of adenomata is not uncommon.

A peculiar feature in our case was the presence of gas in the abscess. Only one similar case was reported before (Joffe and Schamroth, 1966). In both cases the condition occurred in negroes, the onset of the swelling in the neck was abrupt and accompanied by constitutional symptoms, and the culture from the pus drained at the time of incision was sterile. In our case both recurrent laryngeal nerves and the right sympathetic trunk were possibly affected by pressure or by toxic neuritis.

The treatment of acute suppurative thyroiditis consists of surgical drainage and appropriate antibiotics. Where a pre-existing nodular goitre is present, thyroidectomy is recommended (Altemerer, 1950). Mild hyperthyroidism has been noted in some cases (Altemerer, 1950; Sheets, 1955) and this may require additional pre-operative preparation. Rarely, hypothyroidism may result from the destruction of the thyroid tissue (Adesola, 1962).

Acknowledgements

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