Haematuria was noted in our patient during cyclophosphamide therapy and but this resolved when the drug was discontinued. Fortunately, he was then already in remission and continued to do well when put on Azathioprine instead. Nonetheless, we must bear in mind that the NIH series showed a 50% relapse rate among those in remission and it is our hope that our patient will continue with this follow-up and treatment wherever he may be.

This case of WG may well be the first of its kind reported in Malaysia and provides a fascinating insight into the natural history of this disorder if left undiagnosed, particularly with regards to the complex multi system involvement that can slowly but progressively develop.

Acknowledgements

The authors are grateful to the Director-General of the Ministry of Health, Malaysia for his permission to publish this article.

References

1. Hoffman GS, Kerr GS, Leavitt RY *et al.* Wegener Granulomatosis: An analysis of 158 patients. Ann Intern Med 1992;116 : 488-98.

2. Leavitt RY, Fauci AS, Bloch DA *et al.* The American College of Rheumatology 1990 criteria for the classification of Wegener's granulomatosis. Arthritis Rheum 1990;33 : 1101-7.

3. Li PKT, Leung JCK, Lai FM *et al.* Use of antineutrophil cytoplasmic autoantibodies in diagnosing vasculitis in a Chinese patient population. Am J Nephrol 1994;14 : 99-105.

Typhoid Thyroiditis

A Y Jasmi, FRCS(Edin.)*, Rohaizak, MS*, F A Meah, FRACS*, B T Sulaiman, MMed, *Department of Surgery (Division of Endocrine Surgery), **Department of Radiology, Faculty of Medicine, Hospital Universiti Kebangsaan Malaysia, 56000 Cheras, Kuala Lumpur, Malaysia**

Summary

Acute suppurative thyroiditis in a 62 year old lady with enteric fever is reported. Plain radiography of the neck showed a distinct localised abscess cavity with air fluid level. A rare causative agent *Salmonella typhi* was isolated. Needle aspiration and antibiotics resulted in complete recovery.

Key Words: Acute suppurative thyroiditis, Thyroid abscess, Enteric fever, Salmonella infection, Typhoid fever

Introduction

The thyroid gland is not a usual place for abscess formation. Most cases occur commonly in patients with a preceding history of thyroid disease or with a pyriform sinus fistula[1]. The commonest organisms implicated in the suppurative process are staphylocci and streptococci[1]. Acute suppurative thyroiditis caused by salmonella infection is extremely rare but is a recognised complication of typhoid fever. We report a case of a lady with enteric fever who developed acute suppurative thyroiditis caused by *Salmonella typhi.*

Case Report

A 62-year-old Malay lady presented with a one month history of a right sided neck swelling which was progressively growing in size. A week prior to admission the swelling had increased markedly accompanied by pain and dysphagia. She was also noted to be lethargic, slow in thought and movements and her appetite had decreased. Five days before admission she started having loose motions 4 to 5 times a day. She was neither diabetic nor hypertensive.

Clinically she was pyrexic, very lethargic and unwell. The right lobe of the thyroid gland was enlarged measuring 5.0 x 6.0 cm and was firm and markedly tender. She was diagnosed as having a subacute thyroiditis with symptoms of hypothyroidism. Due to her fever and diarrhoea, the patient was investigated for typhoid fever.

Although clinically she appeared to be hypothyroid, the thyroid functions showed an elevated free T4 level (26.71 pmol/l ; normal range: 9.14 - 23.81 pmol/l) and a low TSH level (0.13 uIU/ml ; normal range: 0.32 - 5.00 uIU/ml). The ESR was raised 126 mm/hr (Westegren) and white cell count was 12 300/mm^3. Anti-mitochondrial and anti-thyroglobulin antibodies were not detected. Plain radiographs of the neck, however, revealed a well loculated lesion on the right side of the neck with a distinct air fluid level (Fig. 1). As a result of this finding the diagnosis was changed to acute suppurative thyroiditis.

Widal test revealed strongly positive typhoid O titres of 1:1600. Stool, urine and blood cultures were however, negative for any pathogens. Ultrasonography of the thyroid gland showed a 5.0 x 6.0 x 3.0 cm well defined cystic lesion with pockets of gas at the lower pole of the right lobe. The thryoid gland was also multinodular. The cystic lesion was aspirated to dryness under ultrasound guidance . Fifteen mls of darkish brown fluid was obtained and this grew *Salmonella typhi* sensitive to all the antibiotics tested.

Intravenous Augmentin (amoxycillin + clavulanic acid, SmithKline Beecham) 1.2 gm t.d.s. was commenced. The fever and diarrhoea dramatically subsided and the dysphagia disappeared. She became more alert and recovered. The treatment was switched to oral administration after three days. A repeat ultrasound a week later showed that the lesion had shrunk to 4.0 x 2.0 x 4.0 cm with no further fluid collection. She was discharged well. At follow up 6 weeks later she remained well with thyroid functions back to normal (T4 : 13.73 pmol/l, TSH : 0.6 uIU/ml). The swelling was smaller. At three months follow-up a repeat neck x-ray and ultrasound showed complete disappearance of the cystic swelling. She was advised surgery for the multinodular goitre but she refused.

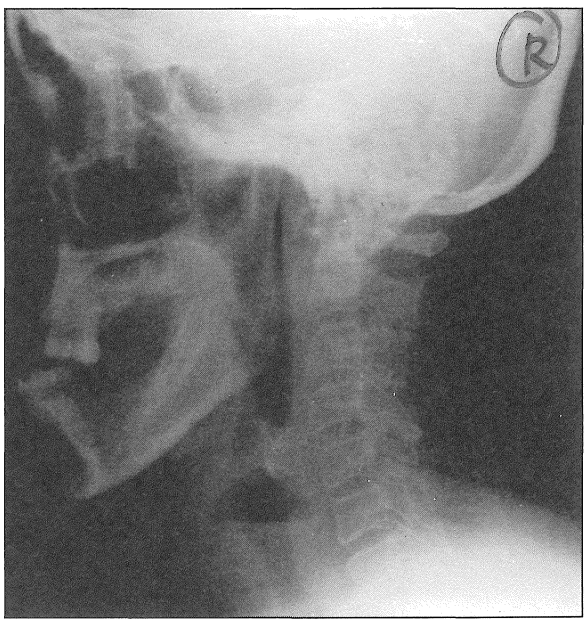

Fig. 1: Plain radiograph of the neck (lateral view) showing the well loculated abscess cavity with distinct air fluid level

Discussion

Extra-intestinal focal pyogenic infections caused by salmonella can involve many organs including soft tissues such as the skin, parotid gland, thyroid gland, breast, inguinal node and branchial sinus[2]. Although a recognised complication of typhoid fever, the thyroid gland itself is a very rare site for acute suppurative salmonella thyroiditis. As noted by Rehman *et al* very few cases have been reported in the last three decades.[3] Many of the cases reported seemed to have occurred in patients who were either diabetic, immuno-compromised or had underlying thyroid disease. Our patient was neither a diabetic nor immuno-compromised but she did have an underlying multinodular goitre. A diseased gland probably makes it more susceptible to invasion by microorganisms than a normal one. The manner by which salmonella gained access to the thyroid gland is difficult to ascertain but it was most likely due to hematogenous spread following bacteraemia. Once the organisms have settled in the gland, the suppurative process occurred. No previous reports have shown a clear distinct abscess cavity with air fluid level in the thyroid gland on a simple plain x-ray. In our case, this feature promptly clinched the diagnosis of an acute suppurative thyroiditis and excluded the diagnosis of a subacute thyroiditis. Perhaps, this simple investigation should be performed routinely in all cases of thyroiditis, although admittedly, not all cases with suppuration may show air-fluid level.

Although our patient was thought to be hypothyroid as a consequence of a subacute thyroiditis, the elevated serum free T4 clearly showed that her 'hypothyroid' symptoms were most likely attributable to the enteric fever rather than anything to do with the thyroxine levels as she improved dramatically once the appropriate antibiotics were started. The elevated serum free T4 with low TSH is probably due to the diffuse inflammation accompanying the suppurative process resulting in disruption of follicles with release of preformed thyroid hormone into the circulation. This is similarly seen in the initial phase of de Quervain's thyroiditis. Though the serum T4 was biochemically elevated she did not manifest any toxic signs.

Acute suppurative thyroiditis secondary to salmonella can be succesfully treated conservatively[3]. A combination of needle aspiration and appropriate antibiotics brought about complete recovery in our case. Surgical drainage is required only when there are no signs of improvement or when complications such as fistulation occurs. Whether the underlying diseased thyroid requires further elective surgery or not is a matter of debate. Even if the thyroid was operated at a later stage it would be more appropriate to perform surgery based on established indications rather than as a prophylactic measure for suppurative thyroiditis. Since our patient refused surgery, it would be interesting to see if the thyroiditis would recur in the future.

References

1. Jeng LB, Lin JD, Chen MF (1994) Acute suppurative thyroiditis: a ten year review in a Taiwanese hospital. Scand J Infect Dis 26(3) : 297-300.
2. Lalitha MK, John R (1994) Unusual manifestations of salmonellosis - a surgical problem. Quarterly J Med 87 : 301-9.
3. Rehman MTA, Basir N, Zia N, Farooqi B (1991) Thyroid abscess 'an unusual complication of typhoid fever'. J Trop Med Hyg 94 : 55-56.