

A rare adverse effect of radioactive iodine therapy in a child with Graves Disease

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Background

Radioactive iodine (RAI) therapy has become the preferred treatment for Graves disease in children. Its use has found favor due to the risk of adverse effects in medical management and the invasiveness of thyroidectomy. Side effects of RAI in adults are well-documented and include dry mouth, sore throat, and neck pain. With its relatively recent application to Pediatric patients, there is not a complete understanding of adverse effects in the Pediatric population. Previous studies have demonstrated that RAI uptake occurs in the sinuses and some adults have reported nasal symptoms following RAI.

Objective

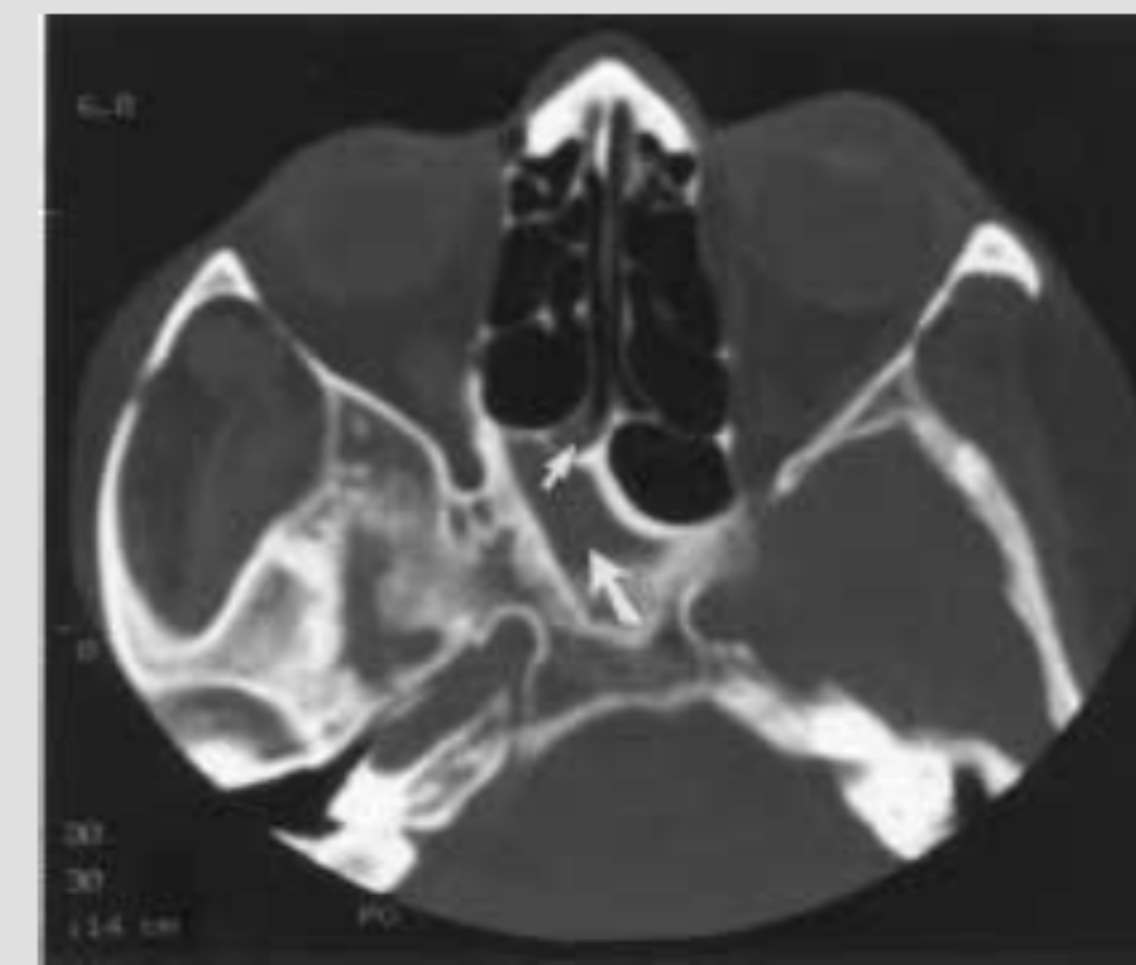
To report a case of clinical sinusitis due to RAI therapy in a child.

Results

Patient is a 13.5 year old caucasian female with a history of Gilbert's disease who underwent RAI therapy for hyperthyroidism due to Graves disease. She received 20.9 mCi I-131. Eight days after RAI treatment, she developed symptoms of facial pain with a sensation of forehead burning without documented fever. She did not have neck pain or sore throat at that time. Despite analgesics, rest and cold compresses, her complaints persisted. Thirteen days post RAI therapy patient was diagnosed clinically with sinusitis secondary to RAI treatment. This patient was started on a trial of oral pseudoephedrine and her symptoms improved within 24 hours. Upon review, patient had a history of chronic sinusitis preceding RAI therapy. However it had been well-controlled with nasal fluticasone at the time of RAI treatment.

Conclusions

This patient endured prolonged discomfort and anxiety due to the under recognized adverse effect of RAI therapy. Studies have shown that even with diagnostic scintigraphy using 5mCi, the nose is a common site of RAI accumulation. With smaller nasal passages, children may be at an even higher risk for this particular side effect. As we start treating younger patients with RAI, it is important to be aware of all potential side effects. To the best of our knowledge, this is the first report of this particular complication in a pediatric patient. Given the common nature of clinical sinusitis in the pediatric population and the increasing use of RAI to treat Graves disease, clinicians must be alert to this adverse effect in order to treat timely and avoid unnecessary radiographic studies.



Computed tomographic scan of skull base (bone window setting) in axial projection showing sclerotic margins and mucosal thickening filling right compartment of sphenoid sinus and a small air-fluid level in adjacent nasal cavity corresponding to site of radioiodine uptake. These findings are consistent with acute inflammation or infection in addition to underlying chronic sinusitis. (1).

References

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3. Approach to the Pediatric Patient with Graves' Disease: When is Definitive Therapy Warranted? Andrew J. Bauer. *J Clin Endocrinol Metab* 2011;96:580-588.

