

Figure 2 (a) Anterior segment photograph of right iris showing areas of segmental iris atrophy corresponding to the site of operated muscles. (b) Anterior segment photograph of fellow eye for comparison.

incision and the preservation of anterior ciliary vessels.⁴ The latter is done by carefully dissecting them away from the recti muscles.

Our case is unique because there has been no reported case of iris hypochromia as the only feature of anterior segment ischaemia in a patient with SLE. It highlights the need to be aware of the possibility of precipitating anterior segment ischaemia in patients who may be at risk. There may be argument for assessing anterior segment circulation in this group of patients prior to squint surgery. Current methods include iris fluorescein angiography and, more recently, indocyanine green iris angiography,³ both of which have their own limitations. The iris fluorescein angiogram is limited to lighter-coloured irides. Indocyanine green iris angiography overcomes this problem but the facility is of limited availability. However, good clinical examination

preoperatively should be the first step in assessing at-risk patients. This may be the only step necessary in practice. The methods mentioned above can be used if appropriate.

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Sir,

Extrusion of a radon seed after 40 years, a case of mistaken identity

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A 43-year-old man was referred for the removal of a 'radium needle' extruding from the skin of his left upper eyelid. It was easily removed and subsequently proved to be a radon seed. Finding out why it was put there proved more elusive. 'Spent' radon seeds are not innocuous, and can make their presence felt even after 40 years.

Case report

The patient had initially presented to his GP with an erythematous and oedematous left upper eyelid. It was treated as preseptal cellulitis with oral antibiotics. As the swelling subsided a metallic object protruding from the

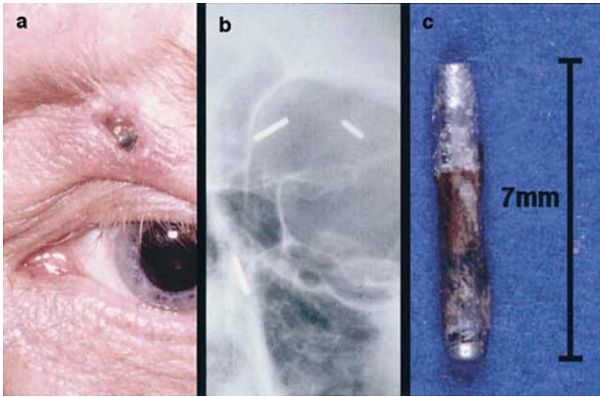


Figure 1 (a) A radon seed can be seen extruding from the skin 40 years after insertion. (b) An antero-posterior view of the left orbit showing the three remaining radon seeds. (c) The radon seed after removal, the original gold foil surrounding it is no longer apparent.

skin became visible (Figure 1a). The GP had been led to believe that this was the end of a 'radium needle', which he thought should be removed.

The patient had previously been seen at the age of 12 weeks with a 'cavernous haemangioma', for which treatment was not required. He had been told later that he had a 'sleepy eyelid' that closed 1 h after waking. Surgical intervention failed, so five radioactive implants were inserted around the left eye at the Radium Institute in Liverpool, at the age of 14 months. Two of these fell out a week after insertion. The other three had not caused any further problems and had been noted on dental radiographs 15 years previously (Figure 1b). He was otherwise fit and well.

There was no radioactivity above the background level. On examination, the visual acuity was 6/4 in both eyes. There was loss of the medial third of the left eyebrow and two scars: one above the protruding implant and a second in the naso-jugal fold. There was a small metallic object protruding from just below the eyebrow with a mild erythematous reaction surrounding it (Figure 1a). The other implants were not palpable. There was a poorly defined upper lid crease on the left, but the palpebral apertures and levator function was symmetrical between the two eyes. The conjunctivae were white. The corneas and lenses were clear, with no sign of cataract formation. The fundal examination was normal, apart from a long-standing operculated hole inferiorly, with no sign of radiation retinopathy.

The implant was removed under local anaesthetic and sent for analysis. The other two seeds were left in place. It was subsequently identified as a radon seed (Figure 1c). When he was reviewed 2 weeks later, the wound had healed. The patient did not want the other seeds removed and he was discharged.

The Radium Institute closed in 1958 and the patient records were transferred to the Clatterbridge Centre for Oncology in Liverpool. Unfortunately, our patient's records could not be traced at the Merseyside and Cheshire Cancer Registry or the Clatterbridge Centre.

Comment

Radium needles are about 5 cm long and emit gamma radiation with a half-life of 1622 years. They are removed after the desired therapy has been completed. A man with three radium needles embedded in his upper lid for 45 years would have suffered necrosis of that side of his face. The confusion over the element used for the implant presumably arose from its insertion at the Radium Institute in Liverpool. Radon is an alpha emitter with a half-life of 3.8 days, its immediate decay products, radium B (^{214}Pb) and radium C (^{214}Bi), are therapeutically useful. The useful radiation from radon seeds lasts only 1 week to 2 months, so they were usually left *in situ* after treatment. However, it has become clear that they may still be radioactive 30 years later and may extrude through the skin after many years.^{1,2} Numerous different radionuclides have been made into seeds for the local administration of radiotherapy (Table 1).

Although it is now customary to associate radiotherapy chiefly with the treatment of malignant diseases, in the past it was used far more widely for the treatment of benign tumours, inflammatory processes, as well as the rather enigmatic 'disorders of function and miscellaneous conditions'.³ In the case of 'inflammatory processes or manifestations of unknown or doubtful aetiology, the purpose was gently to assist a natural but ineffective process of healing and defence, or to restore an organ to normal functioning.'³ The ophthalmic conditions for which radiotherapy was most likely to be employed were Mooren's ulcer, rosacea keratitis, corneal vascularisation associated with keratoplasty, superficial punctate keratopathy, recurrent erosion, spring catarrh and pterygium,³ which are not conditions that commonly affect small children.

At the time when the radon seeds were inserted, 'cavernous haemangioma' was often the phrase used to describe what we now call capillary haemangioma or strawberry naevus. Crying can engorge the naevus and exaggerate the degree of ptosis,⁴ perhaps leading to the description of a sleepy eyelid.

Interstitial brachytherapy was believed to initiate regression of the capillary haemangioma that would then continue spontaneously. The rapid fall-off of radiation would limit treatment to the area immediately surrounding the implant. The inability to shield

Table 1 Physical properties of radionucleotides previously used for making radioactive seeds

Element	Isotope	Half-life	Emission	Energy (MeV)	Seed size (mm)	Tenure
Radon	²²² Rn	3.8 d	α	5.49	0.75 × 4	Left to extinction
			α	4.98		
			α	0.51		
Radium B	²¹⁴ Pb	2.68 m	β	0.67–1.03		
			γ	0.053–0.352		
Radium C	²¹⁴ Bi	19.7 m	α	5.51–5.54		
			β	0.4–3.18		
			γ	0.61–2.4		
Gold	¹⁹⁸ Au	2.7 d	β	0.96	0.8 × 2.5	Left to extinction
			γ	0.416 (0.412–1.088)		
Chromium	⁵¹ Cr	28 d	γ	0.323	0.8 × 2.5 ^a	Left to extinction
Tantalum	¹⁸² Ta	111 d	γ	1.13 (0.043–1.43)	0.4 × 3 ^a	Temporary implant
Iridium	¹⁹² Ir	74.2 d	β	0.24–0.67	0.3 × 3.6–4.2	Temporary implant
			γ	0.38 (0.136–1.062)		
Iodine	¹²⁵ I	60.25 d	γ	0.364 (0.08–0.637)	0.8 × 4.5 ^b	Temporary implant
					0.8 × 6 ^c	

d=days, m=minutes, MeV=megaelectron volts, mm=millimetres.

^aCut from wire, so length variable.

^bOriginal design.

^cModified design.

uninvolved structures, local sloughing of tissue and atrophy of the overlying skin made this technique unsuitable, and it is no longer recommended.^{5,6} The radon seeds seem to have worked well for this patient; however, capillary haemangiomas involute and fade spontaneously, in 30% by 3 years and 72% by 7 years, usually with minimal residual stigmata.^{5,7}

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Optic disc metastasis presenting as an initial sign of recurrence of adenoid cystic carcinoma of the larynx
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Metastatic tumours to the optic disc are rare. In a series of 660 patients with intraocular metastasis, only 30 (4.5%)