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 α α	5.49 4.98 0.51	0.75×4	Left to extinction
Radium B	^{214}Pb	2.68 m	β γ	0.67–1.03 0.053–0.352		
Radium C	^{214}Bi	19.7 m	α β γ	5.51–5.54 0.4–3.18 0.61–2.4		
Gold	^{198}Au	2.7 d	β γ	0.96 0.416 (0.412–1.088)	0.8×2.5	Left to extinction
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 γ	0.24–0.67 0.38 (0.136–1.062)	0.3×3.6–4.2	Temporary implant
Iodine	^{125}I	60.25 d	γ	0.364 (0.08–0.637)	0.8×4.5[b] 0.8×6[c]	Temporary implant

d=days, m=minutes, MeV=megaelectron volts, mm=millimetres.
[a]Cut from wire, so length variable.
[b]Original design.
[c]Modified 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 haemangiomata involute and fade spontaneously, in 30% by 3 years and 72% by 7 years, usually with minimal residual stigmata.[5,7]

References

1 Downing JG, Folan Jr DW. Late ulceration 20 years after implantation of radon seeds. *N Engl J Med* 1953; **249**: 1031–1032.
2 Graham JB. Spent radon seeds: I late effects. *J Radiol* 1960; **74**: 399–402.
3 Duke Elder S, Lederman M. Radiotherapy. In: Duke Elder S (ed). *System of Ophthalmology*, Vol. VII. Henry Kimpton: London, 1962, pp 765–797.
4 Haik BG, Karcioglu ZA, Gordon RA, Pechous BP. Capillary hemangioma (infantile periocular hemangioma). *Surv Ophthalmol* 1994; **38**: 399–426.
5 Jakobiec FA, Jones IS. Vascular tumors, malformations and degeneration. In: Tasman W, Jaeger EA (eds). *Duanes Clinical Ophthalmology*. rev. ed. Harper & Row: Philadelphia, 1993, Chapter 37.
6 Martin LW. Angiomas in infants and children. *Am J Surg* 1964; **107**: 511.
7 Bowers RE, Graborn EA, Tomlinson KM. The natural history of the strawberry nevus. *Arch Derm* 1960; **82**: 667.

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Sir,

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%)

had metastatic cancer of the optic disc.[1] We report our case because it is, to our knowledge, both the first reported case of metastasis to the optic disc and choroid from the larynx, and also the first case of an adenoid cystic carcinoma that metastasised to the optic disc.

Case report

A 65-year-old man had a history of adenoid cystic carcinoma of the larynx that was managed by surgery and radiation therapy in February 1997. In August 1999, he noted a decrease of vision in his left eye and came to our hospital. Fundus examination of the left eye showed a hyperaemic optic disc that was elevated and appeared nodular (Figure 1). In addition, a brown choroidal mass extended up to the disc and surrounded the disc, and there were flame-shaped haemorrhages, venous congestion, and a serous cystic retinal detachment inferiorly. A relative afferent pupillary defect was detected in the left eye. The fundus of the right eye was normal. The anterior segments and intraocular pressure in both eyes were normal. Goldmann perimetry of the left eye revealed an enlargement of the blind spot and a marked constriction of the field that was consistent with the area of retinal detachment. Fluorescein fundus angiography of the left eye revealed hypofluorescence at the centre of the disc and hyperfluorescence at the margins of the disc in the arterial and early venous phase (Figure 2). There was a marked diffuse hyperfluorescence of the disc in the late phase.

Choroidal/optic disc metastasis was suspected and systemic work-up initiated. Magnetic resonance imaging in T1-weighted images showed no intracranial tumour other than the intraocular tumour. Haematologic studies and cerebrospinal fluid examination were unremarkable. X-ray of the chest showed an abnormal shadow in the right pulmonary hilum and mediastinum, and the subsequent CT scan of the chest revealed an enlargement of the mediastinal lymph node and bone metastasis. Both transbronchial lung biopsy and fine needle aspiration to the chest wall revealed class V, adenoid cystic carcinoma cells. The systemic status of the patient worsened rapidly from January 2000, and he died from systemic metastasis of the carcinoma in the following month. Unfortunately, the eyes could not be obtained for histopathology.

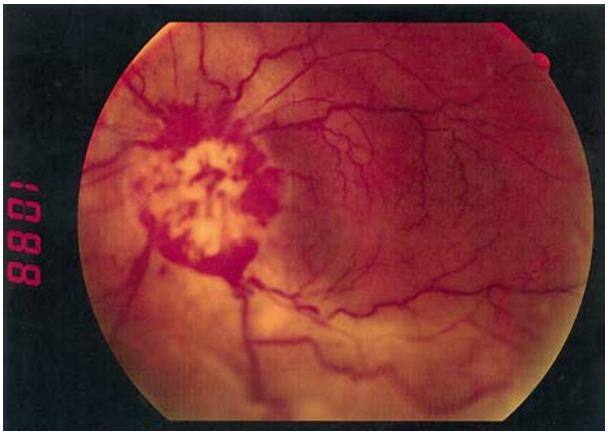

Figure 1 Fundus photograph of the left eye. The left optic disc is markedly hyperaemic, and there are flame-shaped haemorrhages and venous congestion. A choroidal mass extends up to the disc and surrounds the disc.

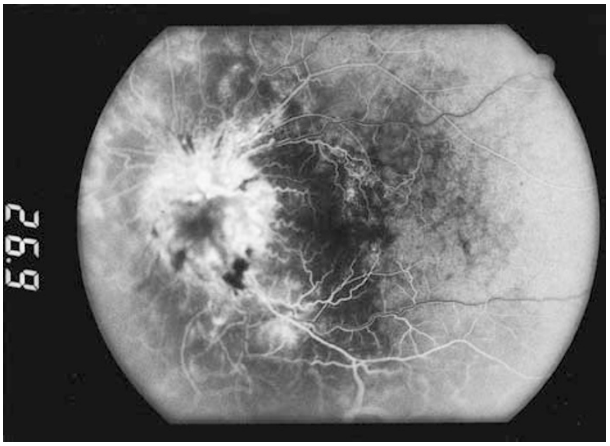

Figure 2 Fluorescein fundus angiography showing hypofluorescence at the centre of the left optic disc and hyperfluorescence at the margin of the disc in the arterial and early venous phase.

Comment

In 1999, Shields *et al* summarised that the most common primary tumours that metastasised to the optic disc were breast carcinoma (43%) and lung carcinoma (27%). A metastasis of a laryngeal cancer of the optic disc has not been reported, although adenoid cystic carcinomas of the larynx are pathologically very rare and account for only 0.2% of all larynx neoplasm. There are a few reports of choroidal metastasis of an adenoid cystic carcinoma, from the salivary gland[2–4] and from the submandibular gland[5], both of which are common sites for adenoid cystic carcinomas.

We reported a case of tumour of the optic disc extended to the choroid that metastasised from an adenoid cystic carcinoma of the larynx. This patient was also unique because the optic disc metastasis presented as the first sign of multiple metastases from a recurrent laryngeal cancer after a successful treatment.

References

1 Shields JA, Shields CL, Singh AD. Metastatic neoplasms in the optic disc: the 1999 Bjerrum Lecture: part 2. *Arch Ophthalmol* 2000; **118**: 217–224.
2 Sautter H. Bilateral choroidal metastasis in a case of alveolar carcinoma. *Ophthalmologica* 1979; **179**: 243–247.
3 Gutmann SM, Weiss JS, Albert DM. Choroidal metastasis of adenocystic carcinoma of the salivary gland. *Br J Ophthalmol* 1986; **70**: 100–103.
4 Shields JA, Carvalho C, Shields CL, Singh AD, Wagner D. Bilateral choroidal metastasis from adenoid cystic carcinoma of the submandibular gland. *Retina* 2000; **20**: 406–407.
5 Jenrette JM, Fitzgerald Jr RH. Metastasis to the choroid complicating adenoid cystic carcinoma. *Arch Otolaryngol* 1982; **108**: 509–510.

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Sir,

A delayed complication of cataract surgery in a patient with pseudoexfoliation: dislocation of the intraocular lens

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Pseudoexfoliation syndrome is an age-related condition in which abnormal fibrillar extracellular material accumulates within ocular tissues. The presence of pseudoexfoliation is of particular importance in those patients undergoing cataract surgery, as it is associated with an increased risk of perioperative complications such as zonular dehiscence, capsular rupture, and vitreous loss.[1,2] Recently, a previously unrecognised complication following routine cataract surgery, namely spontaneous late dislocation of the intraocular lens (IOL), has been described in such patients.[3] The authors found that the mean time from surgery to presentation with this complication was 7 years, with the longest interval being 9 years and 6 months. We describe a patient with pseudoexfoliation syndrome in whom spontaneous dislocation of the IOL occurred 14 years after cataract extraction.

Case report

A 77-year-old male underwent uncomplicated right extracapsular cataract extraction (ECCE) and insertion of a sulcus fixed Pearce tripod polymethyl methacrylate (PMMA) posterior chamber IOL in 1987. He was known to have pseudoexfoliation, although no zonular weakness was noted at the time of his surgery. He had previously undergone uncomplicated left endocapsular cataract extraction with insertion of a Pearce tripod IOL and had no significant past medical history of note. He was followed up regularly in the years following his surgery for monitoring of his intraocular pressure, which was always within normal limits. However, 14 years after undergoing surgery to his right eye, he presented to the ophthalmic department with a 1-day history of reduced vision in this eye. On examination, his visual acuities were counting fingers only in the right eye and 6/9 in the left eye. The posterior capsular remnants and IOL in his right eye were found to be subluxed inferiorly with the superior haptic tilted anteriorly through the pupil margin (Figure 1). There was no evidence of subluxation of the IOL in his left eye. His intraocular pressures were within normal limits in both eyes. Fundoscopy revealed early age-related macular degeneration. After 4 days, he underwent removal of the dislocated IOL was along with the capsular remants. An anterior vitrectomy was performed and an anterior chamber IOL was inserted. Postoperatively, his visual acuity improved to 6/6 with appropriate spectacle correction, and his intraocular pressure remained within normal limits. His visual status has remained stable during subsequent follow-up.

Comment

To our knowledge, this is the longest time interval that has been described for spontaneous dislocation of an IOL in a patient with pseudoexfoliation. While the precise aetiology of this recently recognised complication is not fully understood, postmortem findings in eyes with pseudoexfoliation suggest that late decentration of the capsular bag and remnants is related to zonular weakness.[4] As with the study of Jehan *et al*[3] we can only speculate about whether the type of IOL used contributes to late onset. It will be of interest to note if the current range of posterior chamber IOLs causes similar problems in years to come. Ophthalmologists should be aware that potentially serious complications can occur in patients with pseudoexfoliation syndrome for a considerable period of time after cataract surgery, and these patients should be warned accordingly.