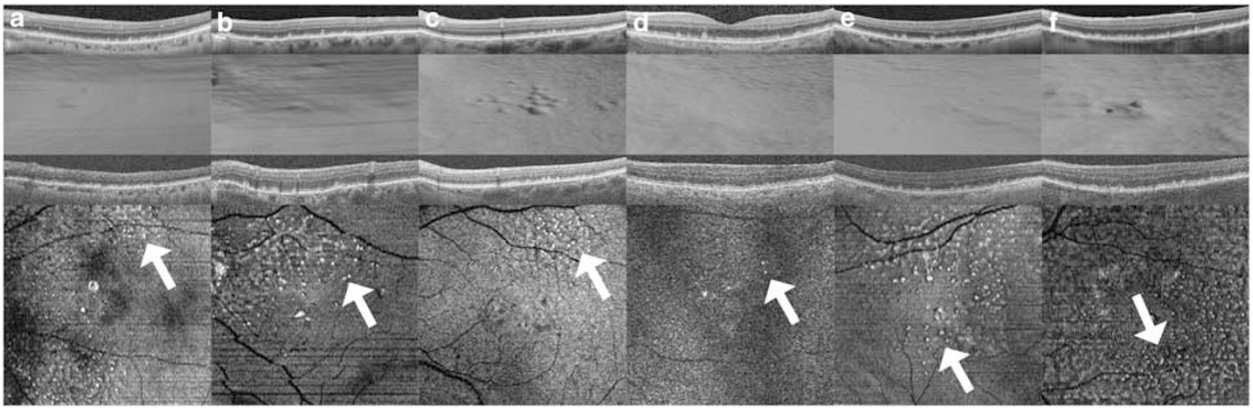

Figure 1 SD-OCT manual segmentation and subretinal drusenoid deposits (SDD). Six eyes (a–f) with SDD well demonstrated by line scan protocol (top row). SDD are absent on drusen maps (second row), and cube-scanning protocols exclude subretinal structures seen on individual B-scans (third row). However, SDD are well demonstrated through manual segmentation (arrows to representative structures, bottom row).

B-scan protocols that use line averaging to enhance detail and reduce speckle noise. Current OCT drusen detection algorithms typically use lower resolution single-line raster scans to shorten scan acquisition time and maximize the area scanned for segmentation. Segmentation protocols typically identify drusen only beneath the RPE, missing subretinal structures, such as subretinal drusenoid deposits.

In a representative series of six eyes with subretinal drusenoid deposits, macular cube scans (500×128 and 200×200 protocols) obtained with the Zeiss Cirrus HD-OCT (Carl Zeiss Meditec, Dublin, CA, USA, v4.5.1.11) failed to show subretinal drusenoid deposits with adequate resolution. However, subretinal drusenoid deposits visualization was possible with the Cirrus HD-OCT in all six of our cases if manual segmentation was performed on C-scan (advanced visualization, RPE algorithm, 37 μm slab elevated above the RPE; Figure 1).

In summary, SD-OCT macular cube scans for non-exudative AMD have a limited ability to show important subretinal structures, such as subretinal drusenoid deposits, because of inherently lower B-scan resolution and lack of analysis internal to the RPE. However, manually segmented *en face* curved C-scans on the Cirrus HD-OCT can display subretinal drusenoid deposits without changes to the protocol. With the advent of pharmacologic therapy for non-neovascular AMD, an assessment for subretinal drusenoid deposits should be included in automated macular analyses.

Conflict of interest

M Engelbert and KB Freund are consultants at Genentech. DW Switzer declared no conflict of interest.

Reference

1 Zweifel SA, Imamura Y, Spaide TC, Fujiwara T, Spaide RF. Prevalence and significance of subretinal drusenoid deposits (Reticular pseudodrusen) in age-related macular degeneration. *Ophthalmology* 2010; **117**: 1775–1781.

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Sir,

Primary signet ring cell carcinoma of the eyelid in a young woman

The primary signet ring cell carcinoma of the eyelid (PSCE) is an extremely rare tumor. Only a few cases have been reported in the peer-reviewed literature.[1–4] Nearly all of the 23 patients reported so far were healthy middle-aged or elderly males.[2] In our clinic, however, we observed a PSCE in a young woman.

Case report

The 33-year old patient presented had an indolent swelling of the left eyelid (Figure 1a), which she had been noticing for 4 months. The skin surface and conjunctiva over the lesion were normal. The tumor was removed in the operating theater assuming that the patient was suffering from a chalazion. The removed tissue was routinely sent to the pathology department. Microscopic examination detected numerous tumor cells with accumulation of PAS-positive intracellular mucoid material and marginalized hyperchromatic nuclei (Figure 1b). These signet ring cells showed immunohistochemical positivity for cytokeratins 7 (Figure 1c) and 5/6, whereas the reaction with

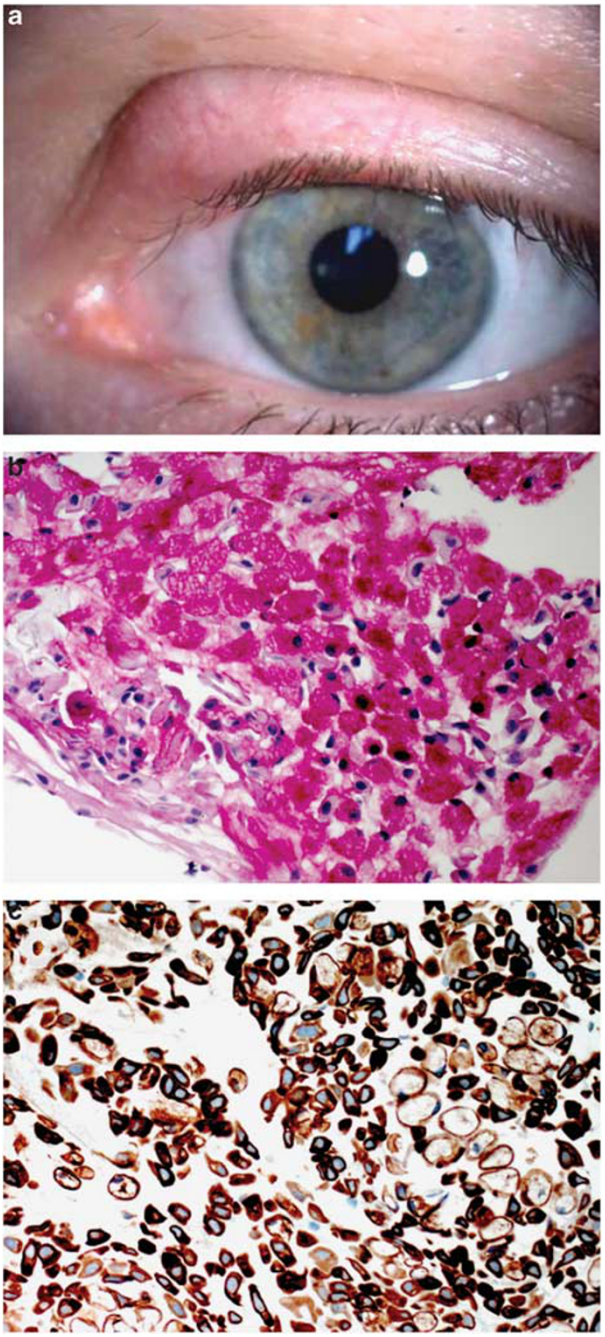

Figure 1 (a) Indolent tumor of the left upper eyelid. (b) Signet ring cell carcinoma with PAS-positive intracellular mucoid material (×200). (c) Signet ring cell carcinoma with strong cytokeratin 7 immunoreaction (×200).

antibodies against cytokeratin 20 was negative. The immunoreactions with antibodies directed against the estrogen receptor α (ER) and progesterone receptor (PR) were both negative (data not shown). This reaction pattern was compatible with the differential diagnosis of a metastatic gastric signet ring cell carcinoma or a primary signet ring cell carcinoma of the periorbital region. The negativity for ER and PR made the diagnosis of a metastatic lobular breast carcinoma unlikely.

Periorbital metastases from primary infiltrating carcinomas elsewhere have been frequently reported.[5] Because PSCE is a diagnosis of exclusion, a thorough work-up is crucial to exclude extracutaneous metastasizing signet ring cell carcinoma, especially from the gastrointestinal tract, breast (lobular subtype), and urinary bladder.[2] Clinical and radiological examinations (computer tomography and magnetic resonance imaging, gynecological examination, mammography, colonoscopy, and gastroduodenal endoscopy) did neither reveal a metastatic malignant breast carcinoma nor malignancies of the abdomen. Furthermore, metastases of the PSCE could be excluded.

Because a radical excision with wide margins is essential in case of PSCE, a second surgery was performed to remove tissue of the tumor, which might have remained. The deep excision included conjunctival, tarsal, subtarsal, and muscular tissue. The defect was covered with amniotic membrane. In the histological work-up, the margins of the specimen were tumor-free and no residual malignant cells were detectable. In more advanced stages, orbital exenteration, radiation therapy, and adjuvant chemotherapy should be considered.[2]

We have followed the patient in an interdisciplinary follow-up program for carcinoma patients for 1 year so far. There have been neither signs of a local recurrence nor of metastases until now.

Comment

Our case demonstrates the importance of a meticulous histological work-up, even when a lesion does not appear to be suspicious.

Conflict of interest

The authors declare no conflict of interest.

References

1 Auw-Haedrich C, Boehm N, Weissenberger C. Signet ring carcinoma of the eccrine sweat gland in the eyelid, treated by radiotherapy alone. *Br J Ophthalmol* 2001; **85**: 112–113.
2 Mortensen AL, Heegaard S, Clemmensen O, Prause JU. Signet ring cell carcinoma of the eyelid - the monocle tumour. *APMIS* 2008; **116**: 326–332.
3 Rosen Y, Kim B, Yermakov VA. Eccrine sweat gland tumor of clear cell origin involving the eyelids. *Cancer* 1975; **36**: 1034–1041.
4 Wollensak G, Witschel H, Bohm N. Signet ring cell carcinoma of the eccrine sweat glands in the eyelid. *Ophthalmology* 1996; **103**: 1788–1793.
5 Kuchle M, Holbach L, Schlotzer-Schrehardt U. Gastric adenocarcinoma presenting as an eyelid and conjunctival mass. *Eur J Ophthalmol* 1992; **2**: 3–9.

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Sir,

Long-term presence of metallic particles in the DSAEK interface

In Descemet-stripping automated endothelial keratoplasty (DSAEK), graft preparation is done with a mechanical microkeratome.[1] Interface corneal metallic deposits due to the microkeratome dissection have been described after LASIK[2] but have not been described with DSAEK. We report a case of post DSAEK patient with long-term presence of presumed metallic particles in the interface.

Case report

A 75-year-old female presented with bilateral Fuchs dystrophy and nuclear sclerosis, worse in her right eye. She underwent planned phaco-emulsification, foldable three-piece IOL implantation with DSAEK in right eye. DSAEK donor tissue was prepared by eye bank with automated microkeratome. The procedure was performed by a technique described elsewhere.[3] There were no intraoperative complications. After 1 week, slit-lamp examination revealed donor disc in place, and clear and compact cornea. Presence of multiple brightly reflective particles was observed in interface. There was no associated anterior chamber reaction or subjective symptoms. In the last follow-up visit, 18 months postoperatively, corrected visual acuity was 20/25 with compact and clear cornea. Interface particles were unchanged and character of brightly reflective deposits was unaltered (Figure 1).

Comment

To our knowledge this is the first report of presumed metallic particles in host-graft interface after DSAEK. Absence of anterior chamber reaction, reflective nature, wide area of deposition, and no change with topical steroids excluded possibility of intralamellar keratitis, epithelial downgrowth, or infectious etiology. Especially the reflective nature, sharp borders of particles and inert nature were similar to the metallic deposits described in interface after LASIK. In previous studies, microkeratome-related blade shattering leading to deposits of metallic debris have been described in LASIK.[2] Wave-like deposition of debris in DSAEK interface with presumed origin from microkeratome[4] and small particles observed only in confocal microscopy[5] have been reported in previous studies after DSAEK.

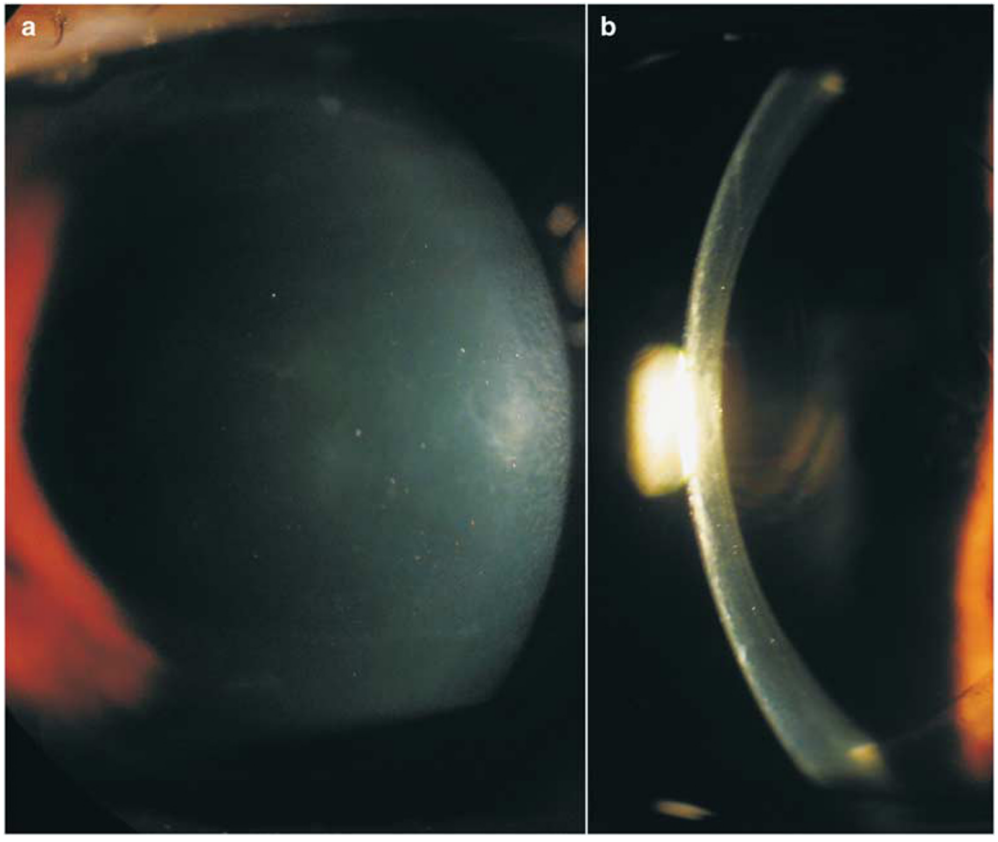

Figure 1 (a) Slit-lamp examination at 18 months showing characteristic metallic interface deposits scattered diffusely between host and graft. (b) Slit view showing the level of deposits in the DSAEK interface.