

## CASE REPORT

# Throwing Light on Nipple Discharge

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■ **Abstract:** Five percent of the patients presenting to a symptomatic breast clinic have nipple discharge. Conventional surgical management for the nipple discharge includes microdochectomy or total duct excision. Breast duct micro-endoscopy (BDME) is a new technique, which helps evaluate the underlying cause of nipple discharge. We describe a case of nipple discharge with a unique etiology: mammary duct foreign body. ■

**Key Words:** Nipple discharge etiology, Breast Duct Micro-Endoscopy

Five percent of the patients presenting to a symptomatic breast clinic have nipple discharge. Conventional surgical management for nipple discharge includes microdochectomy or total duct excision. Preoperative investigations such as ultrasonography and mammography seldom explain the etiology of nipple discharge.

Breast duct microendoscopy is a new technique that helps evaluate the underlying cause of nipple discharge (1,2). It has the advantage of being able to detect lesions deep within the ductal system which otherwise might be missed by routine surgery. It is possible that microendoscopy may bring to light some alternative etiologies for nipple discharge, helping us to better understand this common problem. We describe a case of nipple discharge with a unique etiology.

### CASE HISTORY

A 47-year-old Afro-Caribbean woman presented with a history of 4 months of left nipple discharge. On examination she had multiduct clear discharge that was hemoglobin negative. The management plan was to review her after 4 months, but the discharge became spontaneous and copious. Cytology showed no atypical cells. Microendoscopy was performed under local anesthesia (periareolar

infiltration). The duct openings at 4, 9, and 12 o'clock were cannulated with microendoscopes having an external diameter of 0.9 mm and 1.1 mm. The average length of the duct examined was 6 cm and the mean number of bifurcations crossed was three.

All the ducts showed erythema and frond formation, which in our experience are signs of inflammation. In the distal part of one of the ducts, a plug of black material was seen. Irrigation with saline dislodged fragments of fine dark fibers (Figs 1 and 2). The duct was irrigated until all fragments were washed out. A cytology sample was collected using a microbrush with a diameter of 0.55 mm. This brush can be passed through the 0.45 mm working



**Figure 1.** Breast duct microendoscopy showing an endoluminal fiber and inflammatory frond in the duct epithelium.

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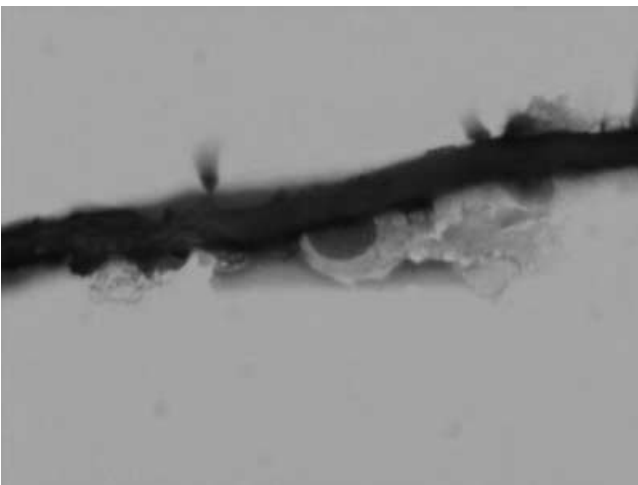


**Figure 2.** Endoluminal fibers (magnification  $\times 40$ ).

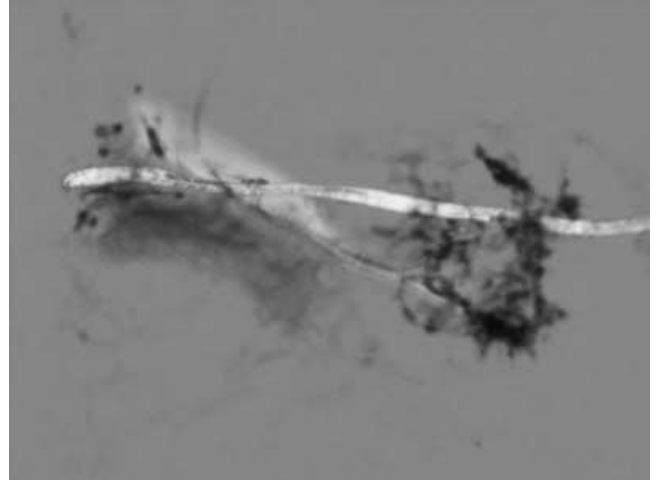
channel of the 1.1 mm scope and precise samples collected under vision.

The cytology sample was cytocentrifuged and the slides were examined. The slides showed fragments of fibers with inflammatory cells adherent to them (Fig. 3). The fibers were birefringent under polarized light (Fig. 4). Comparison slides were prepared using a range of synthetic and natural fibers. The appearance of cotton wool fibers under the microscope was exactly the same as the fibers from the nipple discharge, thus confirming their origin.

The patient continued to have discharge during the next 6 months, although less in quantity. Nipple discharge cytology again confirmed the presence of few similar fine fragments of birefringent fibers. Breast duct microendoscopy was



**Figure 3.** Fiber with adherent macrophages (magnification  $\times 400$ ).



**Figure 4.** Birefringent fibers under polarized light (magnification  $\times 200$ ).

repeated and the same ducts cannulated. This time there was evidence of fibrosis, perhaps reparative, but the fibers were not seen. The patient is still under observation.

## DISCUSSION

Mammary duct foreign bodies as a cause of nipple discharge has not been recognized before. The close association of inflammatory cells with the cotton fibers provides graphic evidence that the presence of the fibers was a cause of duct inflammation (see Fig. 3). The fact that the discharge has decreased following therapeutic ductal lavage suggests that the inflammation caused by the foreign fibers is resolving, and repeat breast duct microendoscopy has shown reparative fibrosis in the same ducts. Breast duct microendoscopy has helped avoid unnecessary open surgery in this case.

## REFERENCES

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