The strange cause of a swollen lymph node

By Rebecca Allan

An inspection of an aspirate taken from a cat's swollen lymph node reveals a fungal culprit.

A middle-aged, spayed, female domestic short-haired cat presented for veterinary examination with a left-sided submandibular swelling. The swelling was thought most likely to be a reactive or inflamed submandibular lymph node secondary to concurrent dental disease.

A dental procedure, including extractions and a course of antibiotics, failed to reduce the size of the swelling in subsequent weeks. A fine needle aspirate was performed and a smear, which had been stained in the clinic, was submitted to the laboratory for cytological examination.

The smear was highly cellular, consisting predominantly of small lymphocytes. A low number of intermediate and large lymphoid cells were also present, along with occasional mast cells, plasma cells and neutrophils. Scattered throughout the smear were numerous macrophages, including epithelioid macrophages. Many of the macrophages contained spherical yeasts surrounded by unstained capsules, characteristic of *Cryptococcus* sp. organisms (see Figures 1a and 1b). These findings led to a diagnosis of *Cryptococcus* sp. lymphadenitis.

The presence of such organisms in the submandibular lymph node is most often due to lymphatic spread from infection in the nasal cavity. As in this case there was no history of upper respiratory signs such as sneezing, nasal discharge or deformation of the nasal region, the possibility of dissemination from a cutaneous lesion or as part of a systemic infection couldn't be discounted.

A course of antifungal medication (terbinafine) was initiated. At a revisit one month later the cat was doing well and the submandibular lymph node had shrunk to half its original size. Two months later she was found dead by her owner. The cause of death and the origin of the infection remain a mystery, as a postmortem examination was not performed.

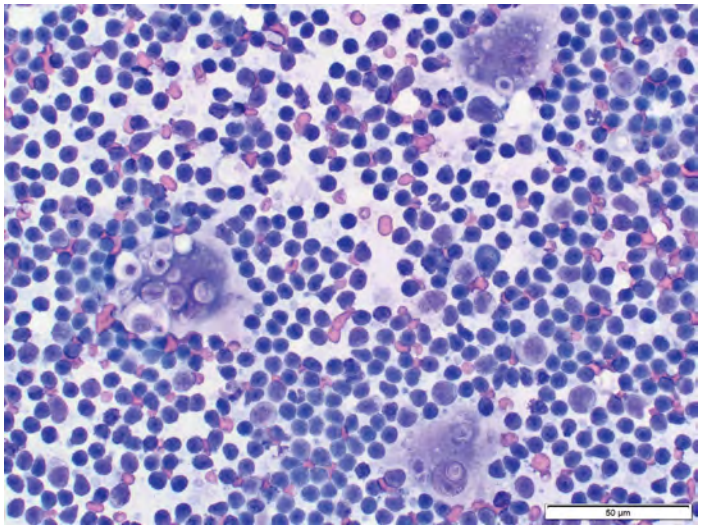

FIGURE 1A: Photomicrograph of fine needle aspirate from submandibular swelling, showing predominance of small lymphocytes with three macrophages containing spherical capsulated yeasts. 50x objective. Diff-Quik stained.

Cryptococcus sp. infections are caused by yeasts of the genus *Cryptococcus*, belonging to the *Cryptococcus neoformans-Cryptococcus gattii* complex. This organism is distributed worldwide and affects a variety of animals.

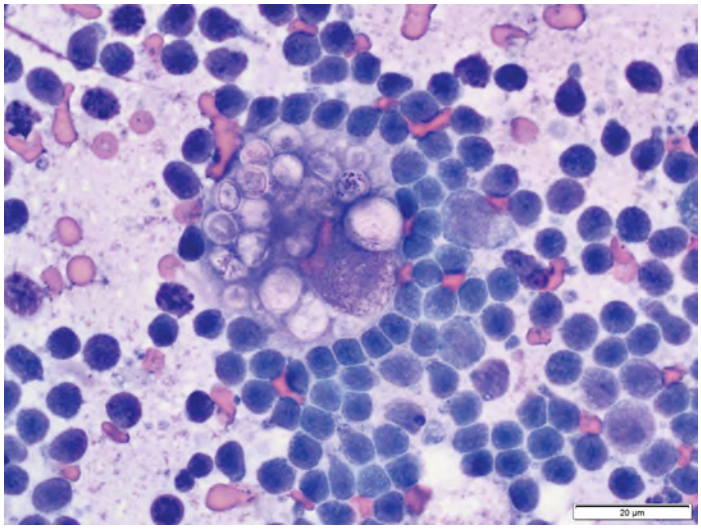

FIGURE 1B: Photomicrograph showing a macrophage packed with spherical capsulated yeasts, giving the characteristic 'soap bubble' appearance typical of *Cryptococcus* sp. yeasts. 100x objective. Diff-Quik stained.

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The principal mode of infection is the inhalation of desiccated yeasts from the environment, especially where concentrations are high such as near pigeon droppings and decaying vegetation. Less common routes of infection include cutaneous inoculation and ingestion. There are several clinical forms including nasal, central nervous system, cutaneous and systemic forms.

A cytological examination of lesion aspirates, nasal exudates or fluids, including cerebrospinal fluid, can be rewarding as the appearance of the yeasts is characteristic and they are often plentiful, as in this case. However, a negative result (a failure to identify any characteristic yeasts) would not exclude the diagnosis. Other tools, including the histopathology of fixed tissues or the *Cryptococcus* antigen test (a lateral flow immunoassay that measures antigen titres in serum or cerebrospinal fluid), might be helpful in reaching diagnoses in these cases.

Thanks to Mark Wiseman and Gabby Mark from The Vet Centre Marlborough for this interesting case and to Karen Bailey for her editorial expertise. VS

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FURTHER READING:

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