

## A cheesy diagnosis

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In September, 2009, a 31-year-old woman presented to our emergency room with a 3-day history of severe abdominal pain. 3 weeks before admission she had undergone a caesarean section to deliver her second child. She had no nausea, anorexia, vomiting, or fever. Examination was normal apart from a positive Murphy's sign. C reactive protein (CRP) concentrations were raised at 9.7 mg/L, but numbers of neutrophils were normal. We suspected acute cholecystitis and started antibiotic treatment with amoxicillin; however, ultrasonography showed no signs of an inflamed gallbladder, and a CT scan of the abdomen showed signs only of peritonitis and postoperative changes.

We decided to do a diagnostic laparoscopy and found many small white patches or nodules, which looked like rice grains, in the lower right half of the abdomen; no other abnormalities were seen. Histological examination revealed that these lesions consisted of anuclear squamous cells (figure), and the diagnosis of vernix caseosa peritonitis (VCP) was made. Vernix caseosa is a yellow-white, cheese-like, material consisting of sebum, lanugo hairs, and desquamated squamous cells,<sup>1</sup> that covers the neonate's skin. It is unique to human beings; it is believed to protect the baby against meconium and amniotic fluid, and might also have an antibacterial role. Both meconium and keratinised squamous cells can induce an inflammatory response with the histological appearance of a foreign-body, giant-cell reaction, similar to that seen with ruptured keratinised or dermoid cysts. To treat our patient, antibiotics were continued post-operatively, and she recovered within a week. She was well at final follow-up in November, 2009.

Although it is possible that VCP results from spilled amniotic fluid or meconium into the peritoneal cavity during a caesarean section, such spillage is almost inevitable, and most of the time has no clinical effects. However, thorough lavage and mopping of paracolic gutters before closure after caesarean section might be

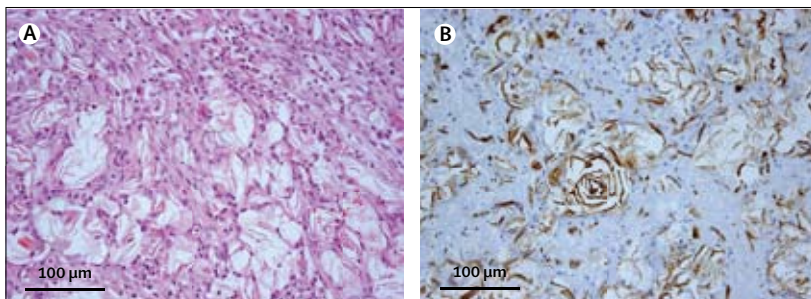
preventive and failing to do this could increase the risk of VCP.<sup>1,2</sup> Several theories of the pathophysiology of VCP have been proposed. First, the concentration of vernix caseosa in amniotic fluid might have a role because difficult labours are associated with higher concentrations of spillage as a result of increased manipulation.<sup>4</sup> Immunological hypersensitivity to vernix caseosa has been dismissed as a possible mechanism, since most patients are primiparous and have not had enough time to become sensitised;<sup>2</sup> nevertheless, the good response to steroids suggests an immunological component in addition to the inflammation.<sup>3</sup> It has also been suggested that VCP can be initiated by antenatal or intrapartum leakage of amniotic fluid via reflux through the fallopian tubes, or an unrecognised uterine perforation.<sup>5</sup> Most women with VCP have low parity. The symptoms, which resemble an acute abdomen, usually start 3 to 35 days after caesarean section.<sup>1</sup> It is important to rule out more common causes of acute abdomen—eg, appendicitis, cholecystitis, or intestinal perforation—when VCP is suspected. In VCP, imaging is inconclusive and diagnosis can only be made by laparoscopy and microscopic evaluation of the typical peritoneal patches. Although VCP can be self-limiting, as in our case, most reports conclude that irrigation of the peritoneal cavity should be done. Also, postoperative, antibiotic treatment should be continued until symptoms of peritonitis resolve, and adjuvant steroid therapy might facilitate recovery. Unfortunately recovery could be compromised by additional and extensive surgery done in the search for an alternative diagnosis. Clinicians should have a better awareness of VCP, especially given the recent increase in the rate of caesarean sections.

### Contributors

EW, XS wrote the report. MD, RA cared for the patient. MD, RA, KG, GDH reviewed the manuscript. Written consent to publish was obtained.

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**Figure:** histology of cheese-like nodules in the abdomen.

(A) Haematoxylin and eosin stain shows nodules of anuclear squamous cells, embedded in a fibrous stroma and surrounded by an inflammatory infiltrate. (B) Immunohistochemical staining for cytokeratin confirms the epithelial nature of the anucleate cells.