A 7-year-old 270-kg (594-lb) crossbred multiparous sow was sent for slaughter as part of a routine replacement herd plan. The sow came from a conventional farrow-to-finish pig herd located in the Abruzzi region (Central Italy). The herd comprised approximately 1,200 sows, which were regularly vaccinated against pseudorabies (Aujeszky disease), erysipelas, and parvovirus. Reproductive (20 weaned piglets/sow/y) and growth performances were stable and considered within the typical range of that herd.

Clinical and Gross Findings

At antemortem inspection, the sow had no relevant clinical signs and was then slaughtered in the regular manner. At postmortem inspection, the official veterinarian reported (apparent) marked enlargement of tracheobronchial lymph nodes, and severe chronic lymphadenitis was suspected. Mild enlargement of the superficial inguinal lymph nodes was also noted, and no additional gross lesions were detected. The thoracic organs were then referred to the Istituto Zooprofilattico Sperimentale dell’Abruzzo e Molise “G. Caporale” (Teramo, Italy) for further diagnostic investigation. In the meantime, the carcass was temporarily condemned and stored at 4°C.

Grossly, a few nodules (2 to 5 cm in diameter) were seen protruding from the esophageal wall, close to the tracheal bifurcation into 2 principal bronchi. The nodules were white and very firm (Figure 1). On cut section, nodules appeared clearly embedded within the esophageal wall and consisted of a brownish and meat-like core—which could be easily removed—surrounded by a thin fibrotic capsule. The tracheobronchial and mediastinal lymph nodes were normal in color, size, and texture. No further gross lesions were observed in thoracic organs.

Formulate differential diagnoses from the history, clinical findings, and Figure 1—then turn the page →

Figure 1—Photographs of the esophagus of a 7-year-old crossbred multiparous sow that underwent diagnostic investigation after abnormalities were detected during a postslaughter inspection. A—A large nodule is present within the esophageal wall (white asterisk). No lesions affecting the overlying esophageal mucosa (black asterisk) are evident. B—On cut section, the nodule consists of a central core (asterisks) that is brownish and meat-like in appearance and surrounded by a thin fibrotic capsule (arrows).
Histopathologic Findings

Nodules were fixed in neutral-buffered 10% formalin, embedded in paraffin, and routinely processed for H&E staining and histologic investigation. Microscopically, the central core of the nodules consisted of concentric layers of agglomerated erythrocytes and usually contained extracellular deposits of hemoglobin-derived pigments (hematoxylin), foci of necrosis, and dystrophic calcification.

The necrotic-hemorrhagic core was surrounded by an intense fibrotic reaction and by inflammatory aggregates, which mainly consisted of lymphocytes, plasma cells, and macrophages often containing granules of hemosiderin (Figure 2). The lesions did not affect the mucosa and the muscular layers of the esophagus.

Morphologic Diagnosis and Case Summary

Morphologic diagnosis: multifocal necrosis, dystrophic calcification, fibrosis, and chronic inflammation of the esophageal wall.

Case summary: thrombosis of the internal venous plexus of the esophagus of a sow.

Comments

Esophageal lesions are uncommon in pigs and mainly include hyperparakeratosis (eg, owing to vitamin A or zinc deficiency), mycotic infections (eg, *Candida albicans* infection), and trauma.1 Pathological findings in the sow of the present report fully overlap those described for pigs with thrombosis of the internal (submucosal) venous plexus of the esophagus. To our knowledge, thrombosis of porcine esophageal venous plexuses was first described by Keil2 and then extensively investigated in slaughtered heavy pigs (typical body weight, 160 kg [352 lb]) in Italy,3,4 with an estimated prevalence of 0.24%.4

The etiopathogenesis of esophageal thrombosis in pigs is largely unknown. Certainly, esophageal thrombosis is not generated by the slaughter technique, given that lesions are chronic and likely > 2 to 8 weeks old.1 Hypothetically, esophageal thrombosis could result from bacterial or parasitic infections. Giberti et al4 performed in-depth bacteriologic investigations on esophageal thrombi in pigs and isolated a wide and heterogeneous range of bacteria, the etiologic role of which remains questionable. As for parasites, nematodes such as *Gongylonema pulchrum* are occasionally detected within the esophageal mucosa of pigs, with no evident tissue change.1 Furthermore, parasitic bodies as well as granulomas and inflammatory infiltrates of eosinophils have never been reported for cases of esophageal thrombosis.3,4 As such, the involvement of parasites as a causative agent of esophageal thrombosis in pigs can be reasonably ruled out.

Esophageal thrombi can be numerous and large in size. Therefore, they could occlude the esophageal lumen, preventing peristalsis and food ingestion. Notwithstanding, thrombosis of the esophageal venous plexuses has to be considered an incidental finding in otherwise healthy slaughtered pigs.

The prevalence of esophageal thrombosis seems very low, but taking into account the high number of slaughtered pigs (> 4.5 million/y in Italy), that type of lesion should be quite commonly observed at abattoirs. Despite this, esophageal thrombi are rarely recorded and likely disregarded or misdiagnosed. Several space-occupying lesions may be considered as differential diagnoses: enlargement of tracheobronchial and mediastinal lymph nodes because of inflammatory reactions or neoplastic disorders, abscesses or granulomas located within the mediastinum, mediastinal tumors, esophageal neoplasms and diverticula, and congenital cysts of the esophagus. We believe that esophageal thrombi in slaughtered pigs should be easily diagnosed at postmortem inspection by taking into account their localization within the esophageal wall, size, color, texture, and appearance on cut section. Such diagnosis is of value in decisions regarding the disposition of carcasses, which can be processed for human consumption despite the presence of esophageal thrombi.

References