

**MORPHOLOGICAL FEATURES OF LYMPHATIC AND
MESOTHELIAL COMMUNICATIONS IN THE BROAD
LIGAMENT OF THE PIG**

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ABSTRACT

The broad ligament containing uterine, paraovarian, and oviduct lymphatics was examined in the pig in various phases of the estrous cycle using light, scanning and transmission electron microscopy. The architecture of these regions differed and was independent of the lymphangions of the precollector and collector lymphatic vessels. Lymphangions were separated from mesothelium by connective tissue and/or muscle layers; however, in the vicinity of the thin walled paraovarian sac, large lymphangions were often compressed between two epithelial layers. Numerous lymphatic lacunae were in direct contact with the peritoneal and paraovarian sac cavities. The mesothelial lining of the broad ligament and the external and internal epithelium of the pig paraovarian sac displayed two distinct cell types. Only smaller cuboidal cells with prominent microvilli extended above the lymphatic endothelium. The surfaces of these cells were discontinuous and showed: 1) lymphatic stomata, 2) small pores or fenestrae, 3) a superficial network of epithelial-free communications with underlying connective tissue to the paraovarian sac in the postovulatory period independent of the lymphatic vasculature, and 4) endothelial (instead of epithelial) cells with crevice-like discontinuities in large portions of the internal sac surface during the follicular phase of estrus. Numerous lymphatic stomata had orifices composed of flattened cuboidal cells while lymphatic endothelial cells were characterized by macula or zonula adherent connections formed within rims of various sizes (up to 50 μm in diameter). During estrus, there were circular (0.5-2.0 μm) and irregular (to 10 μm) interendothelial openings in stomatal orifices with migrating cells.

These morphologic findings suggest that absorption and passage of fluid, particles and cells between cavities and the lymphatic lumen in areas of the paraovarian lymphatic plexus in the pig is feasible.