Pericyst shell or absent pericyst layer in the brain hydatid cyst?

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Pathologically, a hydatid cyst consists of three layers including the endocyst, laminated membrane or ectocyst, and pericyst. The outermost layer, which is fibrous and is known as the pericyst [1], is transformed into a thin but very distinct capsule of fibrous and connective tissue elements. It compresses the parenchymal cells and is full of microvasculature in the liver or lung. This adventitial layer of host origin fully envelops the parasite and fulfills two basic supportive functions: mechanical/protective and nutritional. Both basic nutrients (e.g., glucose, amino acids, Na, K, Ca, P, Cl, and Mg) and oxygen (O₂) are brought together to the parasite by the microvasculature located in the pericyst layer resulting in the possibility of hydatid cyst growth and vitality. Conversely, CO₂ and scolex metabolic products can leave the parasite via the pericyst layer's vasculature; moreover, the pericyst layer is responsible for the immune responses of the parasite [2, 3].

The authors of the article titled “Sonography of multifocal hydatidosis involving lung and liver in a female child” noted that the pericyst layer was absent in brain cysts in the “Discussion” section (1). Actually, brain hydatid cysts are not lacking the pericyst layer; rather, it is composed of a supportive layer of fibrous tissue and glial cells around the hydatid cyst. This layer is thinner and less

well-developed than that in the liver or the lung; however, the function and viability of the cyst are completely the same as those of hydatid cysts of other organs. Hence, it is preferable to refer to this layer in the hydatid cysts of the brain as the “pericyst shell”. The pericyst shell is responsible for the nourishment, growth, and survival of the parasite (i.e., brain hydatid cysts), serving the same function as the pericyst layer in other organs [2, 4, 5].

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