Title:	Intra-epithelially entrapped blood vessels in ameloblastoma
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Abstract:	Background:The ameloblastoma is a benign but locally aggressive odontogenic neoplasm with a high recurrence rate. While significant progress has been made in our understanding regarding the role of tumoral vasculature relative to the diverse behavioral characteristics of this tumor, no attention has been paid to a distinct subset of blood vessels entrapped within its epithelial compartment. As vascular niches are known to influence tumoral growth, clarification of these vessels is important. The objectives of this study were to investigate the morphologic characteristics of intra-epithelially entrapped blood vessels (IEBVs) in ameloblastoma and to speculate on their relevance. Materials and method:Here, we evaluated the frequency, microvessel density (MVD), morphology, and distribution pattern of IEBVs in 77 ameloblastoma of different subtypes based on their immunoreactivity for endothelial markers (CD34, CD31, CD105), vascular tight junction protein

	(claudin-5), pericyte [-smooth muscle actin (-sma)], and vascular basement membrane (collagen IV). Results:EBVs were heterogeneously detected in ameloblastoma. Their mean MVD (CD34=15.467.25; CD31=15.8 +/- 5.04; CD105=0.82 +/- 0.51) showed no significant correlation with different subtypes, and between primary and recurrent tumors (P>0.05). These microvessels may occur as single/clusters of capillary sprouts, or formed compressed branching/non-branching slits entrapped within the epithelial compartment, and in direct apposition with polyhedral/granular neoplastic epithelial cells. They expressed proteins for endothelial tight junctions (claudin-5-positive) and pericytes (-sma-positive) but had deficient basement membrane (collagen IV weak to absent). Aberrant expression for CD34, CD31, and CD105 in tumor epithelium was variably observed. Conclusions:Although rare in occurrence, identification of IEBVs in ameloblastoma could potentially represent a new paradigm for vascular assessment of this neoplasm.
Keyword:	ameloblastoma; endothelium; pericyte; tight junction; vascular basement membrane; endothelial growth-factor; keratocystic odontogenic-tumors; basement-membrane; factor vegf; angiogenesis; expression; cells; carcinoma; density; abnormalities
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