

## **Changes of myoid and endothelial cells in the peritubular wall during contraction of the seminiferous tubule.**

Losinno AD, Sorrivas V, Ezquer M, Ezquer F, López LA, Morales A.

### **Abstract**

The wall of the seminiferous tubule in rodents consists of an inner layer of myoid cells covered by an outer layer of endothelial cells. Myoid cells are a type of smooth muscle cell containing  $\alpha$ -actin filaments arranged in two independent layers that contract when stimulated by endothelin-1. The irregular surface relief of the tubular wall is often considered a hallmark of contraction induced by a variety of stimuli. We examine morphological changes of the rat seminiferous tubule wall during contraction by a combination of light, confocal, transmission and scanning electron microscopy. During ET-1-induced contraction, myoid cells changed from a flat to a conical shape, but their actin filaments remained in independent layers. As a consequence of myoid cell contraction, the basement membrane became wavy, orientation of collagen fibers in the extracellular matrix was altered and the endothelial cell layer became folded. To observe the basement of the myoid cell cone, the endothelial cell monolayer was removed by collagenase digestion prior to SEM study. In contracted tubules, it is possible to distinguish cell relief: myoid cells have large folds on the external surface oriented parallel to the tubular axis, whereas endothelial cells have numerous cytoplasmic projections facing the interstitium. The myoid cell cytoskeleton is unusual in that the actin filaments are arranged in two orthogonal layers, which adopt differing shapes during contraction with myoid cells becoming cone-shaped. This arrangement impacts on other components of the seminiferous tubule wall and affects the propulsion of the tubular contents to the rete testis.