Background: This study has the purpose to investigate the microscopic basic histological structure of the internal inguinal ring in patients operated on for primary indirect inguinal hernia. Patients and Methods: A sample of 72 consecutive male patients older than 15 years-of-age with unilateral inguinal hernia submitted to elective surgery was studied. The primary outcome measure was the histological findings of the internal inguinal ring. All samples were processed only by histochemical techniques. Patients were divided in 3 groups according to age. Group I: patients between 15 and 40 years-of-age. Group II: patients between 41 and 70 years-of-age. Group III: patients older than 71 years. Results: All samples from the internal inguinal ring were constituted by fibrous fascial tissue with elastic fibers which were thicker in younger patients and thinner in older patients. Adipose tissue between elastic fibers was absent in younger patients and was abundant in older patients. Vascular sclerosis was minimal in Group I, moderate in Group II, and important in Group III. Acute or chronic inflammatory cells were absent in all patients. Conclusions: The histological characteristics of the internal inguinal ring in patients with indirect inguinal hernia consist on reduced density and thickness of elastic fibers and increased adipose tissue between elastic fibers. Vascular sclerosis was more severe as the age of the patients increased. These histological changes were related to normal aging.

Keywords
Inguinal hernia, indirect hernia, indirect inguinal ring, hernia histology.