



**Paper #0195**

**Histopathological study of 49 cases of Keratoconus.**

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**Abstract:**

**Purpose:** Keratoconus is a bilateral and asymmetrical corneal ectasia. The pathophysiology of this disorder has yet to be fully elucidated. The aim of our study was to document the histopathological findings in a series of corneal buttons from patients with keratoconus.

**Methods:** A retrospective analysis of 49 cases diagnosed as keratoconus between 2001 and 2006 from The Henry C. Witelson Ophthalmic Pathology Laboratory and Registry, McGill University, Montreal, Canada was undertaken. Histopathological reports were reviewed to obtain data as age and gender. Specimens were fixed in 10% buffered paraformaldehyde solution for 24h, bisected through the center of the button, and embedded in paraffin. Sections were stained with H&E and PAS for light microscopic examination. Two independent ophthalmic pathologists analyzed the slides and the final interpretation was based on agreeing assessments. The data obtained were entered in a Microsoft Excel spreadsheet and analyzed by means of percentages.

**Results:** The group studied was composed of 29 men and 20 women. Age at the time of the penetrating keratoplasty was 39 + 14 years (mean + standard deviation). Forty of the 49 specimens (81.6%) presented with epithelial thinning. Other common features of keratoconus included breaks in Bowman's layer in 35 (71.4%), loss of fibrillar arrangement of the stromal collagen fibers in 31 (63.3%), and folds in Descemet's membrane in 31 (63.3%) cases. Other less common histopathological findings were: deep stromal scarring in 12 (24%), epithelial scarring in 11 (22%), endothelial cell loss in 11 (22%), breaks in Descemet's membrane in 9 (18%), and presence of superficial iron deposits in 7 (14.3%) cases.

**Conclusion:** Some of the histopathological findings associated with keratoconus are subtle. It is important to be aware of them in order to properly confirm the clinical diagnosis.



**Paper #201**

**Intra-Operative Echographic Localization For Radioactive Ophthalmic Plaques In Choroidal Melanoma**

**Purpose:** 1) To evaluate the beneficial effect of intra-operative echographic plaque site localization; 2) To assess the rate of complications of post-plaque insertion.

**Method:** Descriptive study of 48 patients with choroidal melanoma who underwent iodine-125 (I125) or ruthenium-106 (Ru106) plaque radiotherapy with intra-operative echographic confirmation of plaque placement with the aid of a non-radioactive plaque (dummy) at McGill University Health Centre (MUHC) from 1997 to 2002.

**Results:** Patients' mean age was 63.7 years; 52% (25/48) male, 48% (23/48) female. 27% (13/48) of the tumors were confined to the right eye and 73% (35/48) to the left eye. 48% (23/48) of the tumors were located posterior to the equator, 14.6% (7/48) were anterior to the equator, 18.7% (9/48) in posterior pole and 18.7% (9/48) at equator. 69% (33/48) received I125 and 31% (15/48) had Ru106 treatment. 90% of the dummy plaques were initially positioned sub-optimally and required repositioning under echographic guidance. At mean follow-up of 18.8 months, there was no tumor related death or metastasis but one patient required enucleation.

**Conclusion:** Intra-operative echographic utilization has the ability to localize precisely the tumor-plaque relationship, thereby optimizing the radiation delivered to the choroidal melanoma.