

**THE ROYAL AUSTRALIAN AND NEW ZEALAND  
COLLEGE OF OPHTHALMOLOGISTS**



**ADVANCED CLINICAL OPHTHAMOLOGY  
EXAMINATION**

**SUMMER 2006**

**ADVANCED PATHOLOGY  
15 February 2006**

- (b) Candidates must attempt EVERY question.**
- (c) All questions carry equal marks.**
- (d) Time allowed for examination: 2.5 hours**

## **ADVANCED PATHOLOGY SUMMER 2006**

### **Question 1**

- a. Discuss how different fixatives and tissue preparation methods are important in the pathological diagnosis of disease. Give 3 examples.
- b. Briefly discuss the technique of immuno-histochemistry. How has this technique facilitated the diagnosis of disease? What are its limitations?

### **Question 2**

- a. Discuss the similarities and differences in the histological appearances of dermoid and epidermoid inclusion cysts.
- b. Discuss the similarities and differences in the histological appearances of basal cell (seborrhoeic keratosis) and squamous cell papillomas.
- c. List recognised risk factors in the pathogenesis of non melanotic skin cancers.

### **Question 3**

The following is a pathology report of a pterygium excised at the limbus:

“Macro: a triangular piece of soft tissue 4 x 3 x 0.5mm bearing a thickened area at one point with an overlaying white disc.

“Micro: the conjunctival epithelium is normal in some areas but over the stromal thickening the cells are dysplastics in all layers and there is penetration of the basement membrane at the two loci. The underlying stroma contains areas of hyaline and elastotic degeneration. Pigmentation of the epithelial basal layers suggests that the biopsy is taken from an individual based in the Indian subcontinent. Normal tissue is present at the periphery.”

- a. What is your interpretation of the above report and likely diagnosis of this condition?
- b. Considering the patient’s pathology report, what are the principles of management in this situation?

### **Question 4**

Discuss the principles of the pathological examination (macroscopic and microscopic) and likely pathological findings of a corneal specimen obtained during a corneal graft procedure from a patient with:

- a. Keratoconus (common and advanced)
- b. Pseudophakic bullous keratopathy
- c. Descemetocoele

### **Question 5**

- a. Discuss the pathogenesis of thyroid eye disease.
- b. Discuss possible thyroid function test changes of a patient with active thyroid eye disease, and indicate the likely changes on orbital CT scan and orbital gadolinium enhanced MRI scan.

## **ADVANCED PATHOLOGY SUMMER 2006**

### **Question 6**

Discuss the pathophysiology of traumatic optic neuropathy in a patient who has suffered significant head trauma and facial fractures.

### **Question 7**

Discuss the histopathology of primary malignant tumours of the lacrimal gland. Do not discuss primary malignant lymphoma.

### **Question 8**

- a. Discuss the presumed pathogenesis of Peters' anomaly.
- b. Discuss the histopathological changes of Peters' anomaly.
- c. What non invasive technique can be used diagnostically in Peters' anomaly? This technique has a high correlation with the subsequent pathological findings.

### **Question 9**

- a. Define secondary open angle glaucoma and secondary angle closure glaucoma from a morphological/anatomical point of view.
- b. Discuss the main distinguishing histological features between pigmentary glaucoma and pseudoexfoliative glaucoma.
- c. Briefly indicate how corticosteroids may elevate the IOP (intraocular pressure) of a patient.

### **Question 10**

- a. Discuss the mechanisms of injury from acid and alkali burns on the eye.
- b. Discuss the ocular pathological findings of likely late sequelae following acid and alkali burns.

### **Question 11**

Discuss the likely histopathological complications of an eye removed after failed retinal detachment surgery.

### **Question 12**

- a. Discuss the histological features of an eye with a choroidal melanoma treated with plaque irradiation.
- b. List the prognostic indicators for survival in a globe that has been removed for confirmed malignant choroidal melanoma.

**End of Paper**