Introduction

Choroidal melanoma is the most common primary malignant intraocular tumour. It is also the second most common type of primary malignant melanoma in the body. However, it is relatively uncommon.

White people of northern European decent are most often affected. It is rarely found among black people. Hispanics and Asians are though to have a small risk compared to whites. There is a slightly higher incidence in men for all age groups, except from 20-39 years when a small prediction exists fore women. Incidence peaks at around 55 years of age ***(Garcia-Vlaenzuela, 2006)***.

They may be asymptomatic but found incidentally during ophthalmoscopy. In general, those of posterior origin are more likely to be diagnosed. Diagnosis is based on clinical findings and scan results.

Primary choroidal melanoma arises from melanocytes within the choroid. It is thought that they develop from pre-existing melanocytic naevi. They are usually domed shaped and colours vary from darkly pigmented to purely amelanotic. If they break through the Bruch membrane as they grow, they look like a mushroom. They can also be bilobular, multilobular, and diffuse in shape. Choroidal melanomas usually cause death secondary to distant metastases rather than local spread. Its metastatic potential depends on the histopathologic aggressiveness of the tumor cells. Commonly the tumour may metastasise before diagnosis. Matastases are usually to the liver, but may also involve the lung, bone, skin, and CNS. Less frequently choroidal melanoma can metastasise locally into the orbit, the conjunctiva or the maxillo-facial bones***(Pandey et al., 2007)***.

Choice of treatment of choroidal melanoma remains controversial. Although enucleation has been the treatment of choice in the past, research has shown that vision sparing approaches might offer similar degrees of tumour control. A multicentre randomised trial by the Collaborative Ocular Melanoma Study (COMS) Group showed that patient survival after treatment with plaque radiotherapy is similar to enucleation for medium-size melanoma ***(COMS, 2006)***.

Observation may be acceptable for posterior uveal tumours where diagnosis is not well established. In particular, tumours of less than 2-2.5 mm in elevation and 10 mm in diameter can be observed until growth is documented ***(Murray, 2006)***.

Plaque brachytherapy is a widely accepted alternative to enucleation for medium size posterior uveal melanomas (<10 mm in height and <15 mm in diameter). It is associated with cataract development in up to 83% patients ***(COMS, 2007)***.

External beam irradiation using charged particles, either protons or helium ions, is a frequently used alternative method to treat medium size choroidal melanomas (<10 mm in height and <15 mm in diameter), although it has been used for larger tumours. It has similar indications and success rates to plaque brachytherapy ***(Robertson, 2003)***.

Laser photocoagulation and transpupillary thermotherapy are used in selected small choroidal melanomas, when they are located away from the fovea and are less than 3 mm in thickness. Enucleation is the classic approach to choroidal melanomas and has been the preferred treatment for large (basal diameter>15 mm and height >10 mm) and complicated tumours, which compromise visual function, and where other therapies tend to fail. Block excision, or sclerouvectomy, is an alternative

treatment method for choroidal melanomas. It is reserved for small tumours covering less than a one third of the globe's circumference. Orbital exenteration is a radical treatment reserved for cases with widespread orbital extension. Patients with such advanced melanomas are likely to have extensive distant metastases and poor prognosis for survival, with or without orbital exenteration surgery. Although, immunotherapy and gene therapy are in their initial stages of development, they hold some promise for the future. Approx. 30-50% of patients die within 10 years from diagnosis and treatment. It is usually secondary to distant metastases, and the risk is greatest in larger tumors ***(Garcia-Vlaenzuela, 2006)***