Abstract

**Outcomes of Ruthenium-106 Plaque Brachytherapy in Choroidal Haemangioma**

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**Purpose**: To study the long-term results of Ruthenium-106 (Ru-106) plaque brachytherapy in the management of circumscribed and diffuse choroidal haemangioma.

**Method**: Retrospective interventional case series including 78 eyes of 78 treatment naïve patients with circumscribed (n= 67) or diffuse (n=11) choroidal haemangioma with Sturge-Weber syndrome between January 2012 to December 2017. Tumour regression and improvement in vision were the primary outcome measures and resolution of subretinal fluid and complications were secondary measures of efficacy and safety.

**Results**: The mean tumour diameter was 10.3±3.3mm (5-18.5mm) and height was 4.3±1.32mm (2-9mm). The notch (91%) or round (9%) type of Ru-106 plaque was used depending on the location of the tumour. The mean dose of radiation was 3805.9±556.2cGy (2496-5000) at a mean depth of 5±0.9mm (3.5-6) for 45.1±18.9 hours (16-97). The mean duration of follow up was 11 months (6-48). In the last follow up, 88.5% of the haemangiomas showed regression with absence of subretinal fluid in 90% of the cases. Visual acuity improved (>2 Snellen lines) in 64.1% and remained stable in 25.6% of the patients. Radiation retinopathy was the most common complication which was seen in 8 cases and cataract developed in 1 patient.

**Conclusion**: Ru-106 plaque brachytherapy is an effective and safe method of treatment for circumscribed and diffuse choroidal haemangiomas.