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Brachytherapy

Accurate placement of episcleral plaque in brachytherapy of choroideal melanoma

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Purpose/Objective. Present a case showing a technique for accurate plaque placement in episcleral brachytherapy of choroidal melanoma.

Materials and methods. The diagnosis of choroidal melanoma is based on the results of ophthalmoscopic and ultrasonographic examination and completed with metastatic workup. For dosimetric purposes, a virtual simulator of the eyeball is used for extrapolation of ultrasound and funduscopy imaging to determine the clinical target volume (CTV) which includes a minimum margin of 2 mm around the tumor. Prescribed dose to the apex of the tumor is 85 Gy. Intraoperative trans-scleral illumination is done in the opposite side of the tumor and the tumor shade (tumor margin) is marked on the scleral surface with a surgical marker. A dummy plaque is temporally sutured to the sclera exactly in the place of the gross tumor volume (GTV). The perimeter of the plaque can be observed by reflecting the inner surface of the plaque during indirect ophthalmoscopy as a circle of light surrounding the tumor. This makes it possible to determine the exact position of the entire plaque in relation to GTV. If necessary, intraoperative ultrasound B-scan can be used to verify plaque location. Once the correct position is found, the dummy plaque is replaced by a radioactive plaque and sutured definitively. The operated eye is patched and the patient remains hospitalized until plaque removal.

Results. This technique facilitates the identification of the local gross tumor volume and allows an accurate positioning of the plaque in direct contact with the tumor choroid melanoma. The selection of an adequate size of plaque is also critical.

Conclusions. Precise plaque localization is critical to ensure that the choroidal tumor receives the dose prescribed. The team's experience is highly relevant for successful performance of this technique and achieving a significant learning curve for plaque placement technique remains a challenge.

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Demonstration video brachytherapy implant high rate of plastic tubes in cancer soft palate

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Summary. Our video shows the process of implantation of plastic tubes from the first visit in consultation of a 56-year-old male patient diagnosed with squamous cell carcinoma of cT2 cN2a Mo soft palate (history, examination, and images) CT simulation, contouring, planned and treatment until the withdrawal out of the tubes. External radiation therapy 44 Gy photons bilateral neck, bilateral clavicular 50 Gy, ipsilateral neck with electrons up to 56 Gy, and 56 Gy bilateral anterior neck, and N (+) to 70 Gy, cisplatin at 40 mg/m²/week was changed to cetuximab for thrombocytopenia. Has presented mucositis and xerostomia G2. Subsequently, he has been treated with interstitial brachytherapy boost. The implementation of the tubes is carried under general anesthetic in the operating theater CMF central through Pernot technique. The postoperative course was uneventful. CT is performed, contouring, marking the area of 70 Gy in neck five fractions to 3 Gy were applied separated by at least 6 h Total 15 Gy to PTVt with DBE a/b 2=18 and 74 Gy total dose tumor. A week presented mucositis G2 geographical marking the