INTRAOCULAR BIOPSY

Advances in technique improve efficacy and safety, but other issues may still limit widespread use

by Cheryl Guttman Krader In Milan

B iopsy of choroidal tumours is becoming routine at some ophthalmic oncology centres, but others remain very critical of the procedure.

Speaking at the 12th EURETINA Congress, Heinrich Heimann MD and Marc Veckeneer MD, discussed use of choroidal biopsy and issues surrounding the controversy.

At the Ocular Oncology Unit, Royal Liverpool University Hospital, Liverpool, UK, choroidal biopsy is offered to all patients and data indicate that the majority choose to have the procedure. Excluding patients who had enucleation, about two-thirds of ocular melanoma patients have a biopsy, which is performed transclerally or transretinally with a 25-gauge needle, a 23-gauge biopsy forceps or a 25-gauge vitrectomy cutter, said Prof Heimann, consultant ophthalmic surgeon.

However, he acknowledged that justifying intraocular biopsy as a routine clinical procedure requires that it be critically appraised against a set of six factors. A review of those issues suggests that some further developments are needed before biopsy becomes standard practice at all institutions.

Prof Heimann noted that biopsy can address important clinical questions about diagnosis and prognosis, and when performed for either of those indications, it can dramatically impact patient care. Moreover, it appears that the ability to obtain answers about diagnosis and prognosis through biopsy is reasonable thanks to improving tissue acquisition techniques, said Prof Heimann, consultant ophthalmic surgeon.

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Heinrich Heimann MD

Few centres have the capability to perform cytogenetic testing for prognostication.

“There is no point in intraocular biopsy becoming routine if the specimen analysis is not backed up by adequate laboratories,” Prof Heimann said.

Lastly, he noted that before biopsy becomes routine, surgeons will need to modify their infrastructure of patient care so that they can meet the responsibilities of this new aspect of their role as ophthalmic oncologist.

“For surgeons, the challenge of performing intraocular biopsy extends beyond becoming skilled with the technique. Now, they will be the ones delivering bad news that a patient has a high-risk malignant tumour. They have to be able to counsel those patients about treatment and screening strategies and be equipped to provide supportive care,” said Prof Heimann.

“Centres need to gear up for these tasks. That will require some major changes in the service and developing close collaborations with general oncologists and psychologists.”

At the Rotterdam Eye Hospital biopsy is being done routinely in cases where there is major diagnostic uncertainty and high-risk clinical characteristics, said Marc Veckeneer MD. Currently, the procedure is performed using a specialised 23-gauge biopsy forceps (D.O.R.C. Dutch Ophthalmic Research Center, Zuidland, The Netherlands) as this technique appears to optimise both safety and the likelihood of obtaining an adequate sample.

“In the past 12 years, I have tried several techniques for biopsying very flat tumours. My experience was that both 27-gauge needle biopsy and use of a 23-gauge vitrectomy cutter were unreliable in yielding sufficient tissue. The forceps technique permits patients to undergo an invasive procedure with potentially 100 per cent certainty of getting a diagnosis,” Dr Veckeneer said.

Dr Veckeneer reported that over the past 14 months, he has performed forceps biopsy in seven eyes with a tumour smaller than 3.5mm in thickness, and the diagnosis was successfully made on a pathological basis in all cases.

Dr Veckeneer said that when using the forceps in combination with a cannula port system, local seeding is unlikely because there is no contact between the tumour tissue and the eye. Although the potential for metastatic spread is controversial, he remains concerned about the risk.

“Extensive surgical manipulation of a malignant tumour, as in resection, has been reported to be associated with a high risk of early metastatic death if the patient is not treated preoperatively with radiotherapy. Biopsy with the forceps technique causes some tumour disturbance, but we are not performing radiotherapy at that time because the indication for biopsy is major diagnostic uncertainty. However, the fact that treatment may be delayed for up to several weeks if the lesion turns out to be a malignant tumour is an issue in need of review."

Dr Veckeneer also commented on the importance of good communication with the pathologist to assure proper management of the biopsy specimen.

“Just as important as the surgeon doing an uncomplicated biopsy is what happens to these small specimens when they are processed downstream. They need to be treated with extreme diligence,” he said.

Dr Veckeneer noted that use of an automated cell block system (Cellient) can optimise the evaluation of the limited specimen. “Laboratories using this system will usually be able to perform all of the necessary histopathological stains and still send some of the specimen off for gene testing,” he said.

Dr Veckeneer mentioned a video which demonstrates the transvitreal, transretinal choroidal tumor biopsy technique using a 23-gauge forceps and cannula port vitrectomy system (http://youtu.be/jZbm9Zb4SA).

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