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Comments on 'Screening for vestibular schwannoma in the context of an ageing population'

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Letter to the Editors

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Dear Editors,

We read with interest the systematic review by Basu *et al.*[1] entitled 'Screening for vestibular schwannoma in the context of an ageing population'. This correctly noted that there has been an increase in the number of over 70-year-olds presenting with small non-growing vestibular schwannomas which are followed up with a surveillance scan protocol and never need any active treatment. The authors concluded that a prospective analysis of elderly patients should be undertaken, from both a clinical and cost–benefit perspective, given the finite resources and that benign tumours need no direct clinical input bar symptom management.

The paper attempted to systematically review literature published up to the end of 2018, but unfortunately missed our very pertinent paper (Borsetto *et al.*,[2] entitled 'When should we stop scanning older patients with vestibular schwannomas?'), likely because it was published in late 2018. We feel it would be important to alert the authors and readers to our paper, which addresses this exact issue, so that it can be taken into account as well. In our retrospective clinical record review of a 13-year period of data at a tertiary referral skull base unit (2005–2018), we reviewed all patients presenting with a unilateral vestibular schwannoma who were initially managed with a surveillance protocol. A total of 112 patients met the inclusion criteria of being aged 70 years or over at presentation, having at least a 5-year follow up, who received no primary surgical or oncological treatment, with no diagnosis of neurofibromatosis type 2, and who underwent magnetic resonance imaging (MRI) at follow up rather than computed tomography.

In our cohort of patients, the median age at diagnosis was 74 years (range, 70–87 years), with 48 per cent presenting at over 75 years and 12 per cent at over 80 years. Overall, 46 per cent of presenting tumours were intracanalicular, 41 per cent were small, 12 per cent were medium and only 2 per cent were large. In this cohort, 71 per cent of patients showed no tumour growth in the entire follow-up period (growth was defined as an increase of at least 2 mm per year in maximal diameter measured from the initial diagnostic scan). Of the patients who did show tumour growth (29 per cent), 23 per cent were managed with active treatment with either radiotherapy or surgery, and 6 per cent received continued surveillance. The likelihood of tumour growth did not change with increasing age when examined in terms of age groups (70–74 years, 75–79 years, and 80 and over years).

One of the additional factors we investigated was the time-point of growth. Ninety per cent of tumours that grew showed this growth in the first 30 months after diagnosis, but no tumours showed initial growth after 3.5 years (42 months), showing that the risk of later growth is very small in this population.

The only predictor of growth noted was the tumour size at initial presentation. The majority of tumours that did grow presented with an extracanalicular component on diagnosis: only 18 per cent of intracanalicular tumours showed any growth, compared to 37 per cent of small tumours and 54 per cent of medium tumours. The likelihood of tumour growth (across all age groups) has varied in reports, with some rates being far higher than in our review (for instance, Kirchmann *et al.*[3] found that 37 per cent of intracanalicular tumours showed growth). Across the wider literature, the long-term risk of growth after five years of follow up ranges from 0 per cent[4] to 7 per cent,[5] although some studies have noted growth after many years of follow up, which contributes to the difficulty of knowing when it is appropriate to cease surveillance.

Given that we had neither any definitive findings to suggest that these tumours act in a different biological manner in the over 70 years age group nor current protocols in place to suggest when to cease surveillance, our discussion focused on how best to safely manage this patient group in the context of a growing and ageing general population and finite healthcare resources. As it stands, surveillance protocols do not factor in performance status, co-morbidities, cost (to both the healthcare system and directly to the patient in terms of time and travel), quality of life, and anxieties around serial scanning and the

psychological impact of ongoing follow up versus non-follow-up. There is an increased incidence of treatment side effects such as worsening imbalance after surgery or radiotherapy,[6] which can cause a loss of independence and decreased performance status. It is also the case that an older presentation means there is simply less time to accrue side effects of growth from vestibular schwannoma or benefits of any treatment because of decreased remaining life expectancy (e.g. malignant change post-radiotherapy). Additionally, with the increase in co-morbidities as we age, the risk of death from other causes becomes more likely.

With this in mind, we have suggested that a more nuanced and individualised discussion needs to take place between the clinician and patient, which takes into account age, co-morbidities, life expectancy, and the risk of any short- or long-term side effects on quality of life. We made the following recommendations for vestibular schwannoma in the population presenting at age 70 years or over. First, these patients should undergo MRI at diagnosis, followed by a six-month scan to identify fast-growing tumours and annual scans for three years. Second, for low-risk intracanalicular tumours in patients with a shortened life expectancy (less than five years), no further surveillance is recommended. Third, for intermediate risk tumours (extracanalicular tumours and a longer life expectancy), there should be discussion around no further surveillance versus longer interval scanning (e.g. every five years). Finally, for high-risk tumours (large tumours, or those displaying features of raised intracranial pressure, cystic tumours, complex symptoms, or a long life expectancy or low co-morbidity status), discussion should include consideration of periodic interval scanning.

We recognise this is not a 'one size fits all' approach, and that there will need to be deviations from the above protocol in conjunction with patient preference. Nevertheless, we feel that this approach allows a more sensible assessment of appropriate resource use, whilst maintaining safe patient care.

References

1 Basu S, Youngs R, Mitchell-Innes A. Screening for vestibular schwannoma in the context of an ageing population. *J Laryngol Otol* 2019;**133**:640–9

2 Borsetto D, Gair J, Kenyon O, Das T, Donnelly N, Axon P *et al.* When should we stop scanning older patients with vestibular schwannomas? *J Neurol Surg B Skull Base* 2018;**80**:333–7

3 Kirchmann M, Karnov K, Hansen S, Dethloff T, Stangerup SE, Caye-Thomasen P. Ten-year follow-up on tumor growth and hearing in patients observed with an intracanalicular vestibular schwannoma. *Neurosurgery* 2017;**80**:49–56

4 Stangerup SE, Caye-Thomasen P. Epidemiology and natural history of vestibular schwannomas. *Otolaryngol Clin North Am* 2012;**45**:257–68

5 Moffat DA, Kasbekar A, Axon PR, Lloyd SK. Growth characteristics of vestibular schwannomas. *Otol Neurotol* 2012;**33**:1053–8

6 Tuleasca C, George M, Faouzi M, Schiappacasse L, Leroy HA, Zeverino M *et al.* Acute clinical adverse radiation effects after Gamma Knife surgery for vestibular schwannomas. *J Neurosurg* 2016;**125**:73–82

Author's reply

S Basu

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Dear Editors,

I am sending this as a reply to the letter of Daniele Borsetto, co-author of the paper 'When should we stop scanning older patients with vestibular schwannomas?', who wrote about our article 'Screening for vestibular schwannoma in the context of an ageing population' published in your journal.

I read with interest the letter and want to congratulate the authors for their impressive work on vestibular schwannoma where the focus was similar to that of our article. I admit with regret that the article of Borsetto *et al.* was not included in our review paper for the reason mentioned in their letter. The e-publication date of their article was 27 December 2018, which was after we had finished our search. Had this paper been included in our review article, it would have been an important source of information.

It is important to note from these two articles that the percentages of patients who needed treatment were similar (weighted average of 73.66 per cent in our paper and 77 per cent in Borsetto and colleagues' paper). This indicates that the question raised in our article concerning the cost–benefit of using magnetic resonance imaging as a screening tool to diagnose vestibular schwannoma in those aged above 70 years and suffering from asymmetrical sensorineural hearing is still important.

I would like to thank Borsetto and colleagues for their letter and for highlighting an important issue in the management of vestibular schwannoma in the elderly population. The slightly different questions that we posed, which could be termed, 'When should we scan elderly patients with unilateral audio-vestibular symptoms?' is still one that needs to be resolved, and both these articles provide useful evidence on which to base future discussions and policy.

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