Author's response to reviews

Title: Incidental findings on MRI scans of patients presenting with audiovestibular symptoms

Authors:
Vasileios Papanikolaou (vspap@hotmail.com)
Mohamed H Khan (mhkhan@hotmail.com)
Ivan J Keogh (ijkeogh@hse.ie)

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Author's response to reviews: see over
Dear Madam,

We would like to thank the reviewers for their interest in our work and their comments. Their suggestions have been taken in careful consideration and appropriate changes have been made. Please find below a detailed commentary:

1st Reviewer

(1) **Audiovestibular symptoms must be explained in details. What is the number of patients only with audiological symptoms or vestibular symptoms?**

Audiovestibular symptoms are described in details in the inclusion criteria in the material and method section, paragraph 3. Appropriate additions to the description have been made (Patients and Methods, paragraph 3)

A detailed breakdown of the data is not available.

(2) **Because vertigo may be a sign of impaired cerebral circulation, were incidental findings with WML much in patients with vestibular symptoms than in patients only with hearing impairment?**
As a data break down is not available, this is a defect in our study an appropriate comment has been added (Patients and Methods, paragraph 6)

(3) Authors should describe more advanced technique in MRI.

We feel that technical details regarding MRI imaging are beyond the scope of this paper, which focuses on incidental findings and how they should be managed by the ENT surgeons

(4) Authors wrote that MRI with gadolinium enhancement is a gold standard for diagnosis of acoustic tumor. Using the advanced technique of MRI, however, sensitivity of MRI diagnosis of acoustic tumor is now 100% without gadolinium enhancement for screening of the acoustic tumor although gadolinium enhancement is necessary to confirm the acoustic tumor. (Fortnum H, et al, The role of magnetic resonance imaging in the identification of suspected acoustic neuroma: a systematic review of clinical and cost effectiveness and natural history. Health Technol Assess, 2009 Mar;13(18):iii-iv, ix-xi, 1-154. Review)

This has been added to the text (Patients and Methods, paragraph 2)

(5) Using 3 Tesla 3D-FLAIR MRI, precontrast signal was observed in two-thirds of the ears with sudden sensorineural hearing loss, post contrast gadolinium enhancement was observed in one third of the ears with sudden sensorineural hearing loss due to disruption of the blood-labyrinthine barrier. (Yoshida T et al, Three-dimensional fluid-attenuated inversion recovery magnetic resonance
imaging findings in sudden sensorineural hearing loss. Laryngoscope, 2008, 118:1433-7)

This has been added to the text (Patients and Methods, paragraph 2)

(6) Regarding relationship between the vascular loop and the audiovestibular symptoms, authors cited only papers describing negative results. However, positive results have been described in several papers. Special attention should be paid to a paper evaluating both vestibulocochlear and facial nerves (Gorrie A, et al, Is there a correlation between vascular loops in the cerebellopontine angle and unexpected unilateral hearing loss? Otology and Neurotol, January issue, 2010)

Appropriate changes have been to the text (Discussion, paragraph 14)

2nd Reviewer

(1) In abstract, full spelling for WML should be provided.

Appropriate corrections have been made

(2) “Conclusions” was a duplicate of “Results”.

Appropriate corrections have been made to the text. However, we feel that the function of the “conclusions” section is to summarize the “results” and “discussion” sections of the paper, therefore a degree of repetition is expected.

(3) “Key words” might be replaced by “brain lesion, brain tumor, hearing loss, MRI, vertigo”.

Some of the proposed key words have been added to the original ones
In “Patients and methods”, were auditory brainstem response and electrocochleography performed?

What were the vestibular tests?
Appropriate corrections have been made, stating clearly that no electrophysiological and vestibular studies were performed. The lack of electrophysiological and vestibular studies is explained in the Discussion.

Which MR scanner was engaged in the study?

What were the parameters of MRI?

How many patients were given Gadolinium?

What was the MRI sequence for Gadolinium enhancement?
We feel that technical details regarding MRI imaging are beyond the scope of this paper, which focuses on incidental findings and how they should be managed by the ENT surgeons.

In “Results”, what was “other pathology” (line 11, page 7)?
In the first line of the same paragraph readers are referred to table 2, for a detailed account of “other pathology”. Therefore, we feel that a full description in the text would be of little benefit to the reader.

What were “clinically serious incidental findings” (line 14, page 7)?
This phrase is a synopsis of our findings, further details are found subsequently in the text.

On page 8, in line 10, what was the “findings from …sinuses”? 
(13) In line 12, what were “findings from middle ear or mastoid”?

(14) In lines 13 and 14, what were “middle ear/mastoid findings, sinus findings”?

Appropriate additions to the text have been made clarifying these findings (see comments 19, 20)

(15) Please provide the image of “vestibular schwannoma” as authors mentioned on page 7.

We would like to point out that our paper focuses clearly on incidental findings and not on vestibular schwannomas. Therefore, images of the lateral would be completely not related to the concept of the paper

(16) In “Discussion”, in line 11 on page 9, FLAIR sequence was reported to be sensitive to detect inflammation in the inner ear (Sone et al., Acta Otolaryngol. 2009; 129: 239-43). Please cite and discuss on the reference.

Appropriate corrections have been made to the discussion (Discussion paragraph 2)

(17) On page 11, lines 9-17 were irrelevant.

This section of the text refers to the management of the “clinically serious incidental findings” which is one of the key-points of this article. Therefore, we feel that is relevant to the goals of our paper (Prof Please Note: these lines are marked in italics and underlined, just to point them out)

(18) In line 19, it was incorrect to say “As these lesions were small, they were considered as benign findings”.
Appropriate corrections have been made changing the text to “…as these lesions were small and not related to the patients’ symptoms (hearing loss) they were considered benign and therefore routine follow up was suggested”

(19)On page 12, lines 5-6 belong to “Results”.

(20)On page 13, lines 11-17 belong to “Results”.

Appropriate corrections have been made to the text transferring these lines to the results section (see comment 12 and 13)

(21)Since detailed electrophysiological examinations were missing, MRI strategy was not proper. This issue should be discussed to make the report relevant.

We would like to disagree with the opinion that our screening approach was improper for the following reasons:

I. As explained in the Discussion (paragraph 2) in view of the high diagnostic yield of MRI scans versus the high cost and time demands of electrophysiological testing, omitting testing during screening is a completely accepted diagnostic approach

II. A significant number of ENT Departments do not perform electrophysiological testing due to the lack of a fully developed audiology department. Therefore, omitting these tests is a quite common approach

III. Results from vestibular testing are not helpful during screening. On the contrary in cases of intervention, these tests are necessary

(22)”Conclusion” (not “conclusion”) was not properly written.

Appropriate corrections have been made
Sincerely yours,

The authors,

Papanikolaou V, Khan MH, Keogh I