<JLO 22-0545; supplementary material>

**Table 1.** A list and breakdown of all listed specific incidental findings identified by the 12 included studies

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Finding | Mirza *et al*.20 (*n*) | Chisholm *et al*.30 (*n*) | Papanikolaou *et al*.10 (*n*) | Hoekstra *et al*.9 (*n*) | Ahsan *et al*.21 (*n*) | Htun *et al*.18 (*n*) | Kalsotra *et al*.17 (*n*) | Amiraraghi *et al*.8 (*n*) | Wong *et al*.1 (*n*) | Saxby *et al*.3 (*n*) | Sajid *et al*.2 (*n*) |
| Atrophy | 51 | 18 | 9 | 0 | 0 | 7 | 2 | 98 | 0 | 0 | 16 |
| Stroke | 3 | 0 | 4 | 0 | 3 | 0 | 2 | 0 | 0 | 5 | 0 |
| Basal artery ectasia | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Multiple sclerosis | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 8 | 0 | 8 | 0 |
| Meningioma | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Hydrocephalus | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arterio-venous malformation | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 0 |
| Cerebellar tumour | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chronic sub-dural haemorrhage | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Coup and contrecoup injury | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Otosclerosis | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CSF Leak | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buphthalmos | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Intra-cranial cysts | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | 5 |
| Enlarged retro-pharyngeal lymph node | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Encephalomalacia | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parotid mass | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hypoblastic pituitary | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parietal granuloma | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Empty sella | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 3 | 0 |
| Middle cerebral artery aneurysm | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Frontal lobe lesion | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Glioma | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lipoma | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cavernoma | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| High riding jugular bulb | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Labyrinthitis | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ramsay–Hunt syndrome | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Midbrain tumour | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Glomus tumour | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 0 | 0 | 0 |
| Cochlear dysmorphism | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 |
| Chiari malformation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Gliosis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Neuritis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Pituitary adenoma | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Absent bony labyrinth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Cholesterol granuloma | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |

Although all of the above findings were considered incidental in the context of the included studies, it is worth mentioning that some of these findings could be potentially related to audiovestibular symptoms (for example, absent bony labyrinth, cochlear malformations, high riding bulb and so on). Please note that Powell and Choa19 was not included as there was no available specific breakdown included within this study. CSF = cerebrospinal fluid

**Table 2.** Conclusions and recommendations of each included study within the systematic review

|  |  |  |
| --- | --- | --- |
| Study | Year | Outcomes and recommendations |
| Mirza *et al*.20 | 2000 | Serious findings must be borne in mind; discuss the benefit of stroke risk factors for high signal areas |
| Chisholm *et al*.30 | 2006 | Low yield of diagnosis of vestibular schwannoma but high rate of incidental findings seen on scanning |
| Powell & Choa19 | 2010 | 56.8% of patients scanned do not require ENT follow up |
| Papanikolaou *et al*.10 | 2010 | Pre-scan counselling is important because of a small but equal chance of incidental scan findings |
| Hoekstra *et al*.9 | 2015 | MRI has little or no value for patients with tinnitus, & vascular loops are of little clinical significance |
| Ahsan *et al*.21 | 2015 | Asymmetry of 15 dB at 3 kHz on audio is associated with increased yield of VS on MRI |
| Htun *et al*.18 | 2015 | Discussed the importance of patient counselling especially because of the common nature of unilateral audiovestibular symptoms |
| Kalsotra *et al*.17 | 2015 | Reinforced the importance of pre-scan counselling of risk of incidental findings |
| Amiraraghi *et al*.8 | 2018 | MRI is well justified but risk of incidental findings should be counselled for |
| Wong *et al*.1 | 2020 | Low yield on contrast-enhanced MRI, recommends ENT referral & also questioned the use of contrast |
| Saxby *et al*.3 | 2021 | Low diagnostic yield of VS patients with unilateral tinnitus only |
| Sajid *et al*.2 | 2021 | Low detection of VS in primary care & also inappropriately utilised |

MRI = magnetic resonance imaging; VS = vestibular schwannoma