Is ultrasonography required to rule out renal malformations in babies with isolated preauricular tags?

Report by
R S Arora, Senior House Officer, SCBU, University Hospital of Wales, Cardiff, UK; reemaraman@doctors.org.uk
R Pryce, Specialist Registrar, Paediatrics, Royal Gwent Hospital, Newport, UK
doi: 10.1136/adc.2004.050427

You join a new neonatal unit. On your routine baby check you find a newborn with an isolated preauricular tag/pit. The baby has no other malformation or dysmorphic feature on detailed examination. You know that this baby needs to have their hearing tested but you are not sure whether it needs an ultrasonogram as part of routine evaluation to rule out urinary tract anomalies. The unit where you worked previously had a policy of performing routine scans, but your registrar tells you that this is not the policy here. You decide to search for the evidence behind this.

Structured clinical question
In newborns with isolated preauricular tags/pits [patients] is an ultrasonogram of the renal tract [test] required to rule out urinary tract malformations [outcome]?

Search strategy and outcome
Secondary sources
Cochrane—None.

Primary sources

Sixty five results found and then each abstract read for relevant articles.

Embase—same search strategy. No additional papers.

Search outcome
Six relevant papers found. See table 2.

Commentary
The association between external ear abnormalities and renal malformation has been reported previously. There is a general consensus on the need to rule out a urinary tract malformation in a child with a gross ear malformation or when the isolated preauricular tag/pit is accompanied with other dysmorphic features. Some experts have recommended that there is no need for renal ultrasound if isolated tags/pits are not associated with other malformation or dysmorphic feature. However, the studies above give mixed results. The three older studies did not find any increase in number of renal malformations in those with isolated preauricular tags/pits, but they are all limited by small sample size and absence of controls. The other three studies have controls but are underpowered. The fact that the two largest studies which are from the same country with comparable sociodemographic population give opposite results, underlines the need for a larger sample size. This is not easy when you consider the fact that the incidence of preauricular tags and sinuses is around 5–10/1000 live births, and the prevalence of mild renal pelvis dilatation in general population by postnatal screening is 4.6% compared to a reported prevalence of renal malformations ranging from 2.2% to 8.6% in those with tags/pits. To achieve a significant sample size, the study would have to be done over multiple centres for a considerable period of time.

At this stage what seems a sensible practice is that the presence of a preauricular tag or pit should lead to a careful search for other malformations or dysmorphic features, the presence of which will tilt the balance in favour of doing a renal ultrasonogram.

CLINICAL BOTTOM LINE
• There is not enough evidence to derive a firm conclusion on the need for renal ultrasonogram in newborns with isolated preauricular tags/pits.
• The presence of a preauricular tag or pit should lead to a careful search for other malformations or dysmorphic features, the presence of which will tilt the balance in favour of doing a renal ultrasonogram.

REFERENCES
Do non-steroidal anti-inflammatory drugs increase the risk of bleeding after tonsillectomy?

Report by
S R Desikan, Registrar, St Richard’s Hospital, Chichester, UK; meenadesikan@aol.com
N G Meena, SHO, East Surrey Hospital, Redhill, UK
doi: 10.1136/adc.2004.050336

You are a paediatric SHO covering the hospital wards. A 5 year old child has had tonsillectomy, and the nurse looking after this child says the child is in lots of pain. She has given paracetamol but the child is still crying in pain. You consider giving a non-steroidal anti-inflammatory drug (NSAID) but you know that these agents interfere with platelet function and are worried about increased risk of bleeding. You also consider giving morphine but you know that it may cause nausea and vomiting.

Structured clinical question
In children after tonsillectomy [patient] does the use of NSAIDs [intervention] compared with opiates [comparison] increase the risk of bleeding and decrease the risk of nausea or vomiting [outcome]?

Search strategies and outcome
Cochrane—none.
Pubmed: search words—NSAIDs and tonsillectomy and bleeding.
Limits—English.

Table 2 Ultrasonography in babies with isolated preauricular tags

<table>
<thead>
<tr>
<th>Citation</th>
<th>Study group</th>
<th>Study type (level of evidence)</th>
<th>Outcome</th>
<th>Key result</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kugelman et al</td>
<td>Study group: 92 infants born with isolated preauricular tags or pits underwent renal ultrasound on day 1–3 of age Control group: 95 consecutive healthy infants who underwent renal ultrasonography on 2nd day of life</td>
<td>Case control study (level 3b)</td>
<td>Urinary tract anomalies detected on ultra sonogram</td>
<td>2/92 (2.2%; 95% CI 0.2% to 7%) of study group had renal abnormalities 4/95 (4.2%; 95% CI 1.1% to 10%) of control group had renal abnormalities. (p = 1.0)</td>
<td>The age disparity at time of examination between cases and controls might be a source of bias</td>
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<tr>
<td>Kohelet et al</td>
<td>Study group: 70 infants with isolated preauricular tags underwent renal ultrasonography on day 3–4 of life Control group: 69 infants without preauricular tags underwent urinary tract ultrasonography after day 5 as part of investigation for persistent regurgitation associated with cyanotic spells</td>
<td>Case control study (level 3b)</td>
<td>Urinary tract anomalies detected on ultra sonogram which were further investigated by voiding cystography and radionuclide scintigraphy (where necessary)</td>
<td>6/70 (8.6%; 95% CI 2.2% to 12.4%) of study group had abnormalities None (95% CI 0 to 3.6%) in control group had abnormalities (p&lt;0.02)</td>
<td>The study included only preauricular tags. There were no cases of renal malformation in the control group which is less than that of normal population. Also the study was not of sufficient power to make a firm conclusion</td>
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<tr>
<td>Mishra et al</td>
<td>Study group: 34 children with isolated preauricular tag Control group: 34 children who underwent abdominal ultrasound for non-renal problems</td>
<td>Case control study (level 3b)</td>
<td>Urinary tract anomalies detected on ultra sonogram</td>
<td>3/34 (9%. 95% CI 0.6% to 8%) of study group had urinary tract abnormalities None in control group had urinary tract abnormalities (95% CI 0% to 3.5%). p&lt;0.05</td>
<td>The study included only preauricular tags. There were no cases of renal malformation in the control group which is less than that of normal population. The sample size was small and the study was not of sufficient power to make a firm conclusion</td>
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<tr>
<td>Alexander et al</td>
<td>Study group: 69 children preauricular sinus (2 with associated anomalies and 67 isolated) who were seen in ambulatory care paediatric clinic for problems unrelated to preauricular sinus or kidneys underwent renal ultrasonography</td>
<td>Case series (level 4)</td>
<td>Urinary tract anomalies detected on ultra sonogram who subsequently underwent voiding cystouretherogram</td>
<td>Overall 3/69 had significant abnormalities Only 1/67 (1.5%) of children with isolated sinus had an anomaly</td>
<td>The study only looked at preauricular sinuses and did not include tags. Also there were no controls</td>
</tr>
<tr>
<td>Kugelman et al</td>
<td>Study group: 26 infants with preauricular tags (24) and pits (2). 24 had renal ultrasound on day 3 of life</td>
<td>Case series (level 4)</td>
<td>Urinary tract anomalies detected on ultra sonogram</td>
<td>No malformations found Small sample size and no controls</td>
<td></td>
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<tr>
<td>Hudgins et al</td>
<td>Retrospective analysis of all paediatric ultrasounds over 2 year period and review of their medical records. 30 were for children with isolated ear abnormalities—microtia, pits, tags, and minor structural abnormalities</td>
<td>Case series (level 4)</td>
<td>Urinary tract anomalies detected on ultra sonogram</td>
<td>None of the 30 children with isolated ear abnormalities had abnormal renal ultrasounds Small sample size and no controls</td>
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</tbody>
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