Kommentar zum Vortrag „Intracranial Translucency (IT)“ von R. Chaoui

Wolfgang Henrich
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17.02.2010
Follow-up

n=21, up to 12 years (median: 6.5 years)

- Sacral
- Thoraco-lumbar/lumbo-sacral

Cognitive function:
- Adequate IQ >80 or normal cognitive functions

(7/7) sacral
(8/14) thoraco-lumbar/lumbo-sacral

*p <0.04

Stupin JH, Henrich W, 2009
Follow-up

n=21, up to 12 years (median: 6.5 years)

<table>
<thead>
<tr>
<th></th>
<th>sacral</th>
<th>thoraco-lumbar/lumbo-sacral</th>
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<td>(5/7)</td>
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<td>(2/14)</td>
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* Independent ambulation

*p < 0.01

Stupin JH, Henrich W, 2009
Follow-up

n=21, up to 12 years (median: 6.5 years)

bladder control

\[
\begin{array}{cc}
\text{sacral} & \text{thoraco-lumbar/lumbo-sacral} \\
(4/7) & (1/14)
\end{array}
\]

\( *p < 0.01 \)

Stupin JH, Henrich W, 2009
• 50% reduction due to Folic acid fortification

Godwin KA et al
Can J Public Health. 2008,

• 30% underreported birth

TOP

40-50% underreported
Spina bifida lumbosacral 23 wks
50-90% TOPs, if diagnosed before 23 wks
Perinatal course

- closure of the defect within 24-72 hours: 72% (18/25)
- VP-shunt: 60% (15/25)
Closure of the NT
day 22–28 = 5–6 wks

- Constant growth
- Flexion
- Development of ventricles
Cerebellum
Cisterna magna
>2mm

Skull

Ventricle
<10mm
Cranial signs of Spina bifida
Kompliment!

Große Annerkennung und Resonanz bei UOG Journal und US Experten
(1 Titelbild, 1 Originalpaper und 1 Editorial)

Innovativer Ansatz zur Früherkennung einer relevanten Fetalpathologie

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Editorial

From nuchal translucency to intracranial translucency: towards the early detection of spina bifida

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Assessment of intracranial translucency (IT) in the detection of spina bifida at the 11–13-week scan

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Figure 1 Ultrasound image in the mid-sagittal plane of the fetal face showing the nasal bone, palate, mandible, encephal translucency (NT), thalamus (T), midbrain (M), brain stem (B) and medulla oblongata (MO). The fourth ventricle presents as an intracranial translucency (IT) between the brain stem and the choroid plexus.

Figure 2 Reference range (mean, 5th and 95th centiles) of fourth ventricle anteroposterior diameter according to crown–rump length.
Hindbrain herniation is defined as prolapse of the cerebellum through the foramen magnum with associated downward migration of brain stem structures.
Figure 4 Ultrasound images in the mid-sagittal plane of the fetal faces of the three additional cases of spina bifida. The arrows point to the brain stem with absence of the fourth ventricle (compare with the normal case in Figure 1).
The detection of spina bifida before 10 gestational weeks using two- and three-dimensional ultrasound

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Figure 2 Three-dimensional reconstruction of the embryo in Case 1 at 9 weeks 4 days, crown rump length 24 mm. The ultrasound images are obtained in the anyplane mode. The sagittal section shows the irregularity of the contour of the spine. The coronal sections through the embryonic spine, obtained by anyplane slicing, are shown in (a) and (b). The arrows point to the myelomeningocele.

Figure 3 Post-abortem photograph of the bifid spine of the fetus in Case 1 after termination of the pregnancy at 13 weeks 4 days.
A major remaining challenge in first-trimester ultrasoundography has been the diagnosis of open spina bifida. This challenge, however, may now have been resolved by the realization that open spina bifida can be suspected by an easily detectable marker within the brain in the same mid-sagittal plane of the fetal face as for measurement of NT and assessment of the nasal bone. In normal fetuses, the fourth cerebral ventricle presents as an intracranial translucency (IT) parallel to the NT, while in fetuses with open spina bifida there may be absence of the IT\textsuperscript{1}.

Figure 3 Ultrasound image in the mid-sagittal plane of the fetal face in a case of open spina bifida demonstrating compression of the fourth ventricle with no visible translucency. B, brain stem; M, midbrain; MO, medulla oblongata; T, thalamus.
Fragen

• Wieviele mit Spina bifida wurden seitdem prospektiv erkannt?
• Wieviele „Normale“ wurden bereits untersucht?
• Wie oft wird bei „Normalen“ eine auffällige IT gefunden?
• Korreliert die auffällige IT auch mit anderen zerebralen Fehlbildungen?
• Welche Konsequenz ergibt sich aus einer auffälligen IT Karyotypisierung, WV mit 16. SSW zur frühen weiteren FD und evtl. AC
• Welche Aussage kann zur Prognose gegeben werden?
• Anstoss zur kontroversen Diskussion und zu prospektivem Studien (Visualisierbarkeit, Reproduzierbarkeit, intra / Interobservervariabilität)
• Wer kann, soll, darf die IT messen?
• Qualitätskontrolle, Audit?