Circumferential and hemi-circumferential resection of limbs' constriction rings in amniotic band syndrome in a single step correction and circular skin closure: about 19 cases

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Introduction: Amniotic band syndrom

- Rare congenital malformation (P = 1/15 000)
- Clinical diagnostic or during pregnancy with echography
- Physiopathology still misunderstood
- Main clinical signs:
  - Circular constrictions
  - Limb amputations
  - Acrosyndactylies
- Group VI of congenital hand malformation according to IFSSH
Usual treatment of constriction ring: 1 or 2 steps resection by Z or W-Y plasties.

**BUT**

- Unsightly results with Z or W-Y plasties during growth
- No vascular complication with 1 step resection
Object of study

Analysis of:
- aesthetic
- functional results
- feasibility

of a circumferential and hemi-circumferential resection of limbs’ constriction rings in amniotic band syndrome in a single step correction
Material and Methods

**Type of study**:  
- Retrospective  
- French multicenter

**Selection criteria**:  
- Inclusion: single step correction with circular resection  
- Exclusion: absence of amniotic band syndrom, use of Z or W-Y plasties

**Judgment criteria**:  
- Functional: member function according to child’s psychomotor development  
- Aesthetic: POSAS (the Patient and Observer Scar Assessment Scale) and Vancouver scales.
Material and Methods

• 19 patients

• 29 constriction rings

• Average age of surgery: 11 month [0-32]

• Average follow-up: 4 years [0-19]
Surgical Technique

• Skin drawing -> avoid a rotational disorder
Surgical Technique

- Circular incisions and dissection
Surgical Technique

• Skin and subcutaneous tissue mobilization and suture
Results

- Number of patients re-operated: 2

- No scarring, vascular, neurological or lymphatic complication for the others patients
Aesthetic analysis: satisfactory results

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<table>
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<th>VANCOUVER</th>
<th>Average score /13</th>
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<tr>
<td>Patients</td>
<td>2,5</td>
</tr>
</tbody>
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Functional Analysis

**Upper limb:**

- No impairment of the grip or motor skills.
- Disturbance of fine motor skills for 2 patients (acrosyndactylie associated)

**Lower limb:**

- No delay in walking
- Limping for 2 patients (absence of triceps, congenital curvature of the tibia)
Discussion

2 steps resection recommended for a long time

**BUT this study shows the absence of vascular complication with only a 1 step resection.**

Z or W-Y plasties used as a standard treatment

**BUT some surgery teams use other techniques with good results (rectangular, triangular, lipoinjection)**

LIMITES : retrospective study, selection bias, only one examiner, no repeatable scale.
Conclusion

Good aesthetic and functional results
Better comfort for the child and the family.

PROSPECT:
In utero laser treatments to avoid the amputation risk
Thank you