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| Surgical treatment of neuropathic pain | Martijn Malessy, Leiden, Netherlands |

9.1 Pain Prevalence in Children with Brachial Plexus Birth Injury
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Cigdem Sarac, Leiden, Netherlands

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Sarah Becker, Aachen, Germany
9.1 Pain Prevalence in Children with Brachial Plexus Birth Injury

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Introduction: Chronic pain following brachial plexus birth palsy (BPBI) remains poorly understood. The onset of pain following BPBI is atypical for a nerve injury in that it is delayed, typically occurring in late childhood or adolescence. The goal of this study was to establish the prevalence of pain in older children and adolescents with BPBI.

Materials & Methods: A cross-sectional survey of children with BPBI 8-19 years of age was conducted. Eligible patients were identified from our prospective research database. We excluded patients with cognitive delay and recent upper limb injury. The self-report survey included the Faces Pain Scale-Revised (FPS-R) and two questions regarding presence/absence of altered sensation and prior discomfort in either upper limb. Point prevalence of pain was determined by the proportion of patients with an FPS-R score greater than 0. Survey implementation followed the modified Dillman Tailor Design Method.

Results: 684 children were eligible for inclusion. Data from 202 respondents (63% female; mean age 15.1 ± 3.2 years) demonstrates a point prevalence of pain of 42% (n=76) in the affected upper limb. 118 children (58%) reported prior pain in their affected upper limb and 144 (72%) reported altered sensations; a variety of musculoskeletal and neuropathic pain descriptors were used to qualify these sensations.

Conclusion: This study provides evidence that pain is common in older children and adolescents with BPBI, with a prevalence estimate of 42%. Children reporting pain on this survey are currently undergoing a more in-depth assessment to further clarify the pain experience in BPBI.
9.2 The perspective of children with a brachial plexus birth injury on functioning and health, compared to the perspective of healthcare professionals: a qualitative study

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Aims: The aims of this study were to explore and understand the perspectives of children with a brachial plexus birth injury (BPBI) regarding functioning and health, and to compare these perspectives with health care professionals, specialized in obstetric brachial plexus injury.

Method: We conducted a qualitative study using a questionnaire among patients with a BPBI (children and adults) and health care professionals. The importance of fourteen different outcome categories in daily life was scored on a Likert scale, from 1 to 9. All questions were linked to corresponding categories of the International Classification of Disability and Health – Children and Youth version (ICF-CY), and covered all four domains.

Results: We collected answers from 184 patients and from 65 health care professionals. Substantial differences (20% in the important category) were seen on three different aspects: pain, interaction with peers and interaction with health care professionals.

Interpretation: The evaluation of pain was more important to patients with BPBI than to health care professionals. Furthermore, interactions in daily life with their peers and their health care provider were scored more important by patients than by health care professionals. These domains might by underestimated by health care professionals and should be taken in account during consultation and communication with this patient group.
9.3 The characteristics of Pain reported in children with Birth Related Plexus Injuries

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A proportion of patients with Birth Related Plexus Injuries (BRPI) describe recurrent pain. The evaluation of pain is usually limited to simple scales of intensity. The Adolescent Paediatric Pain Tool (APPT) provides a multidimensional record of pain intensity (VAS), location (body chart) and quality (word descriptors).

Aim: To gather information about the incidence, characteristics and descriptors of pain in children with BRPI.

Methodology: The APPT was given to 40 patients who attended nerve injury clinic between February and March 2018.

Results: 29/40 (73%) reported pain related to their BRPI within the last month. 9/29 reported no to little pain, 15/29 reported little to medium pain, 5/29 reported large to worst pain. Pain was distributed throughout the whole arm and identical for all groups irrespective of severity. The most common descriptors lay within the ‘Sensory’ category. The majority of these words reflected nociceptive pain (aching 18/29; hurting 13/29). However, some may be interpreted as neuropathic (numb 6/29; stabbing 4/29; shooting 3/29). ‘Evaluative’ (uncomfortable 16/29; annoying 10/29) and ‘Temporal’ (comes and goes 9/29; once in a while 8/29) words were also used.

Conclusions: This study suggests that the incidence of pain within BRPI is considerable, but episodic in nature. The children in this study mostly used words that are traditionally understood to represent nociceptive pain. However, words which may be interpreted as neuropathic in nature were also identified. Future research with a larger cohort is advised in order to better recognise and understand the characteristics of pain within this patient group.
9.4 Dermis cap for treatment of painful neuroma Becker S, Becker M H-J, Lassner F Pauwelsklinik Aachen

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Introduction

Neuromas can cause painful paraesthesia. Within the past, there have been many surgical approaches to treat painful neuroma. Assuming that the initiation of neuroma formation is triggered by the loss of the target organ we postulate that the growth of the neuroma can be minimized by offering the stump a small patch of dermis as a target.

Methods

From 2009-2017 48 patients with painful neuroma were treated with dermis caps. The neuroma were caused by accidents, tumors, surgeries and few rare causes such as herpes. After exposure and resection of the neuroma the caps were harvested from the edge of the wound, deepithelialized and sutured to the nerve stump using 8x0 Onalon sutures. The stumps with the caps were then secured into the depth of the situs, away from bone prominence or scar tissue.

Results

With 63% of the patients we could achieve good or excellent results in matters of pain and hyperesthesia. 25% of the patients experienced a transient relieve with partial recurrence of discomfort. In 8% no relieve could be achieved.

Discussion

In a sensory peripheral nerve lesion the primary suture is the treatment of choice. If this cannot be accomplished, the treatment of neuroma with dermis caps can result in a serious relieve of pain. For the patients mentioned above with no pain relief other reasons were found in the later assessment, such as proximal nerve compressions and neuroforamen stenosis.