Residência RP Pediátrica
Publicação Oficial da Sociedade Brasileira de Pediatria
ISSN-Online: 2236-6814

Submitted on: 11/28/2022
Approved on: 01/08/2023

CASE REPORT

Intervention on insecure attachment for the treatment of idiopathic chronic pain in Pediatrics

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Keywords:
Chronic pain,
Object attachment,
Pediatrics,
Child,
Adolescent.

Abstract

Introduction: Chronic pain is a public health problem with a high prevalence in children and adolescents. It causes high health costs and severe burden to the quality of life of patients and their families. Since the 1950s, it has been found that primary caregiver-child attachment is paramount for the overall health of individuals and can interfere with the occurrence of several mental and physical disorders, including chronic pain. **Case report:** Two female teenagers with a history of mixed, idiopathic and disabling chronic pain for more than two years, culminating in hospitalization. They received an interdisciplinary approach in the first 24 hours of admission, especially from Psychology, which, since the first contact, identified significant stressors in childhood of both, including attachment insecurity, and engaged them into experiential techniques, relaxation techniques and limited reparenting, resulting in lower intensity of pain, lower need for analgesic drugs and lower disability in the first days of hospitalization and, consequently, resulting on hospital discharge. **Conclusion:** Chronic idiopathic pain in Pediatrics should be addressed by an interdisciplinary team, since the beginning. It should be recognized that the psychological component, especially the issue of insecure attachment, could be very important in etiopathogenesis, perpetuation and severity of chronic pain in many patients, so that addressing it is fundamental for therapeutic success. In addition to accelerate the recovery of the functionality and well-being of those affected, this strategy has the potential to reduce healthcare costs.

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Resid Pediatr. 2024;14(2).
DOI: 10.25060/residpediatr-2024.v14n2-998

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INTRODUCTION

Chronic pain, defined as recurrent or persistent pain lasting more than three months[1], is a public health problem with high prevalence in the pediatric population[2]. It causes high healthcare costs and serious harm to the quality of life of patients and their families[1,2].

Since the 1950s, it has been demonstrated that the primary caregiver-child attachment is crucial for the survival and global health of individuals, interfering in the emergence of various physical and mental conditions, including chronic pain[3]. Despite the evidence, the impact of attachment formation on the pain experience of children and adolescents and the therapeutic potential of psychological intervention focused on it are still little studied[4].

We report the cases of two adolescents with idiopathic chronic pain who received significant symptomatic relief after a few days of the first psychological interventions, focused on insecure attachment, during their stay in a tertiary hospital.

CASE REPORTS

Patient 1, female, 14 years old, with diffuse myalgias and arthralgias for just over two years, mainly in the shoulders, lumbar and cervical spines, with intensity 8 on the visual numerical scale (VNS) of pain and interruption of physical activities and school attendance in recent months. She also complained of recurrent episodes of chest tightness and sudden dyspnea in situations of psychological stress. Upon examination, the only abnormality was pain on palpation of the cervical, scapular and sacroiliac regions, without specific tender points. Laboratory tests were normal (Table 1). She was evaluated by the Hospital Psychologist during the first 24 hours of hospitalization and it was revealed that, at school age, had suffered a traumatic experience and severe reprimand from her mother, which would cause guilt and a rupture in the mother-daughter bond of trust. Since then, she started to experience nighttime awakenings, crying spells, refusing to leave the house and musculoskeletal pain; at ten years of age, auditory and visual hallucinations, with recriminatory content; and, at the age of twelve, self-mutilation in the forearms, trichotillomania and onychophagia. In 2020, the pain intensified, resulting in multiple visits to emergency services. At the age of thirteen, she began psychotherapy, with no improvement in their pain or anxiety-depressive symptoms. In 2021, an outpatient medical investigation did not result in a diagnosis (normal laboratory tests, magnetic resonance imaging [MRI] of the lumbosacral spine and pelvic ultrasound [USG]), culminating in hospitalization.

Patient 2, female, 11 years old, with recurrent pain in the right foot for six years, which progressed to both lower limbs, the neck and lumbar spines two months after admission. The pain worsened until it compromised walking and school attendance. She consulted Pediatric Orthopedics and Neurology, who ruled out specific diseases (normal MRI of the brain and spine and USG of the total abdomen) and referred her for hospitalization. She also reported frequent palpitations and episodes of crying, for no apparent reason. She was admitted with pain that made it impossible to walk, requiring a wheelchair to move around and reporting pain intensity of 10 on the VNS; obesity and pain on palpation and passive and active movement of the four limbs were noted, without other abnormalities. Laboratory tests did not show significant changes (Table 1). Within the first 24 hours of admission, the mother-daughter dyad was evaluated by the Hospital Psychology, which detected signs of insecure attachment in a family transgenerational dimension: unresolved early traumas of the mother limited her in providing the minor's basic demands for affection, who revealed that she did not feel loved or welcomed by her mother.

Hospital Psychology carried out two consultations with each patient during their respective hospitalizations, in which they subjected them to experiential relaxation and limited reparenting techniques, focused on the aspect of insecure attachment of both, with a view to validate the suffering, giving new meaning to the emotions linked to traumatic memories and reestablishing trust in mother-daughter bonds. This resulted in a decrease in pain intensity to 6 in the VNS for both, the demand for analgesics and incapacitation in the first days of hospitalization, allowing hospital discharge on the sixth and seventh days for patients 1 and 2, respectively, in which the second returned walking normally. They returned to school and other activities within the first month after discharge. They were also evaluated by Psychiatry, which prescribed fluoxetine for both, in order to treat depressive-anxiety symptoms (the improvement in pain was not justified after just two days of use during hospitalization); and Pediatric Rheumatology, which discharged its specialty. They maintain outpatient follow-up with Psychiatry and Psychology, both reporting zero pain in the VNS after six months of treatment.

COMMENTS

Chronic pain, defined as recurrent or persistent pain lasting more than three months[1] is a public health problem with an estimated prevalence of 11% to 38% in the pediatric population[2]. Female adolescents are the most affected population[5], as in the cases described. It can be idiopathic or primary (without an apparent organic cause) or secondary (associated with a well-defined chronic disease or identifiable physical injury)[1,4].

Chronic pain causes serious harm to the quality of life of patients and their families; increased risk of depression and anxiety; social isolation; school absenteeism; interruption of leisure activities; and sleep disorders[1,2]. Around 5% to 8% of children with chronic pain experience severe disabling pain[2,5], and 17% to 35% persist with chronic pain into adulthood[2]. Furthermore, chronic pain involves significant health costs as it

Table 1. Laboratory tests.

Test	Patient 1	Patient 2
Red blood cells (millions/mm3)	4.15	4.68
Hemoglobin (g/dL)	13.0	12.5
Hematocrit (%)	36.2	39.0
Mean corpuscular volume (MCV), in fL	87.3	83.33
Mean cell hemoglobin (MCH), in pg	31.3	26.71
Mean cell hemoglobin concentration (MCHC), in g/dL	35.8	32.05
RDW (%)	14.5	15.1
Leukocytes/mm3	7.780	8.450
Segmented/mm3 (%)	4.020 (51.8)	6.100 (72.7)
Eosinophyls/mm3 (%)	370 (4.8)	100 (2.1)
Basophyls/mm3 (%)	10 (0.1)	–
Typical lymphocytes /mm3 (%)	2.670 (34.5)	1.300 (15.4)
Monocytes/mm3 (%)	680 (8.8)	800 (9.5)
Platelets/mm3	246.000	416.000
Erythrocyte sedimentation rate (ESR), in mm/h	7 (ref.: 0 – 30)	39
C-Reactive Protein (CRP), in mg/dL	0.02 (ref.: 0 - 0.5)	0.35
Serum urea (mg/dL)	24.2	28
Serum creatinine (mg/dL)	0.69	0.7
Uric acid (mg/dL)	3.0 (ref.: 2.5 – 6.0)	4.9
Serum sodium (mEq/L)	138	142
Serum potassium (mEq/L)	4.0	4.1
Serum chloride (mEq/L)	105	102
Serum calcium (mg/dL)	8.57	10.0
Serum phosphorus (mg/dL)	5.06 (ref.: 2.3 - 4.7)	5.5
Serum magnesium (mg/dL)	1.97 (ref.: 1.46 - 2.2)	–
Aspartate aminotransferase (AST), in U/L	14	20
Alanine aminotransferase (ALT), in U/L	12	11
Serum albumin (g/dL)	4.24	4.2
Creatinophosphokinase (CPK), in U/L	114 (ref.: 29 - 168)	34
Lactic dehydrogenase (DHL), in U/L	153 (ref.: 125 - 220)	148
antistreptolysine O antibody (ASLO), in UI/mL	150 (ref.: < 200)	218
Rheumatoid factor (UI/ml)	20 (ref.: <30)	6.5
Thyrostimulating hormone (TSH), in µIU/mL	0.59 (ref.: 0.35 - 4.94)	–
Free thyroxine (T4) (ng/dL)	0.90 (ref.: 0.70 - 1.48)	–

is a frequent cause of outpatient and emergency care, hospital admissions and requests for additional tests[2].

Attachment is a child's innate predisposition to seek an affective, selective, lasting and reliable connection with a primary caregiver, who would recognize, interpret and respond to their signals, in the first years of life. A cycle of mutual influence is formed, in which one person's responses shape those of the other, serving as the basis for the formation of the individual's personality and future relationships[4]. Attachment becomes insecure when significant or persistent difficulties occur in this interaction, generally due to the lack of responses (neglect) or nonempathic, abusive or ambivalent responses from the caregiver, or when it is disturbed even after years of healthy initial formation[3,4].

Despite its recognized importance, attachment was not formally researched until the study by psychoanalysts John Bowlby and Mary Ainsworth, in the 1950s. Since then, it has become clear that this neurodevelopmental construct is also crucial for the survival and general health of individuals[3]. The quality of attachment can interfere with the emergence of various mental and physical conditions, such as depression, anxiety, substance use disorders, cardiovascular diseases, inflammatory diseases and chronic pain[3,4].

A neurobiological explanation is the occurrence, in individuals with insecure attachment, of lower circulating levels of oxytocin and less activity in the prefrontal cortex, which would modulate the functioning of the cerebral amygdala and the hypothalamic-pituitary-adrenal axis. This implies persistently high levels of cortisol and corticotropin-releasing hormone, which lead to neurotoxicity, dysregulation of the reward system and a chronic pro-inflammatory state, increasing the risk of the aforementioned diseases occurring. Therefore, insecure attachment is an adverse childhood experience (early-life stress), with long-term consequences[3].

Children and adolescents with chronic pain have lower rates of secure attachment compared to control groups[4]. Individuals with insecure attachment perceive pain as more threatening; have a negative perception of the support they receive in coping with pain, feeling less compelled to seek help; exhibit less ability to develop resilience to pain; and have twice the risk of the pain being generalized and disabling[3].

Despite this evidence, the impact of attachment on the pain experience of children and adolescents and the therapeutic potential of psychological intervention focused on it are still little researched[4]. Most studies on the effect of psychotherapy in the treatment of chronic pain in the pediatric population refer to more traditional interventions[5].

The reported cases highlight the importance of early addressing, by an interdisciplinary team, the aspect of insecure attachment for rapid symptomatic relief and recovery of functionality in children and adolescents with idiopathic chronic pain, increasing the effectiveness of multimodal treatment of this complex condition. Medical investigation must occur simultaneously and harmoniously with other healthcare professionals, especially psychologists, without relegating the psychosocial aspect of chronic pain to a diagnosis of exclusion.

Healthcare professionals must take advantage of scientific advances regarding the early origin of chronic diseases in the pediatric and adult population, in order to recognize secure attachment as a factor in promoting and protecting health. Furthermore, childhood appears as a unique window of opportunity, in which bonds with primary caregivers have greater biological (neuroplasticity) and psycho-sociocultural (greater presence and influence of these caregivers in children's daily lives) chances of being recovered and strengthened.

The timely approach to insecure attachment in the pediatric population with idiopathic chronic pain also has the potential to reduce healthcare costs, by avoiding excess analgesics, exams, consultations and hospitalizations, especially if carried out from primary healthcare units.

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