

Article

# De novo appearance of multiple chemical sensitivity syndrome in a patient affected with lateral meningocele syndrome: unlucky coincidence?

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**Abstract.** Although the coexistence of rare pathologies in the same patient is considered an exceptional event, the possibility to contend with a condition such like this may occur in clinical practice. In these cases, a multidisciplinary approach is required in order to find the most appropriate therapeutic strategy.

Here we describe the clinical case of a 61 years old female affected with a rare genetic pathology known as lateral meningocele syndrome (LMS) who developed a pathological condition that could be framed in the context of a multiple chemical sensitivity syndrome (MCSS) characterized by intolerance to several drugs, foods as well as environmental and chemical agents.

**Keywords:** multiple chemical sensitivity syndrome, lateral meningocele syndrome, case report, pain therapy

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## Introduction

Although the coexistence of rare pathologies in the same patient is considered an exceptional event, the possibility to contend with a condition such like this may occur in clinical practice. (1-20) In these cases, a multidisciplinary approach is required in order to find the most appropriate therapeutic strategy.

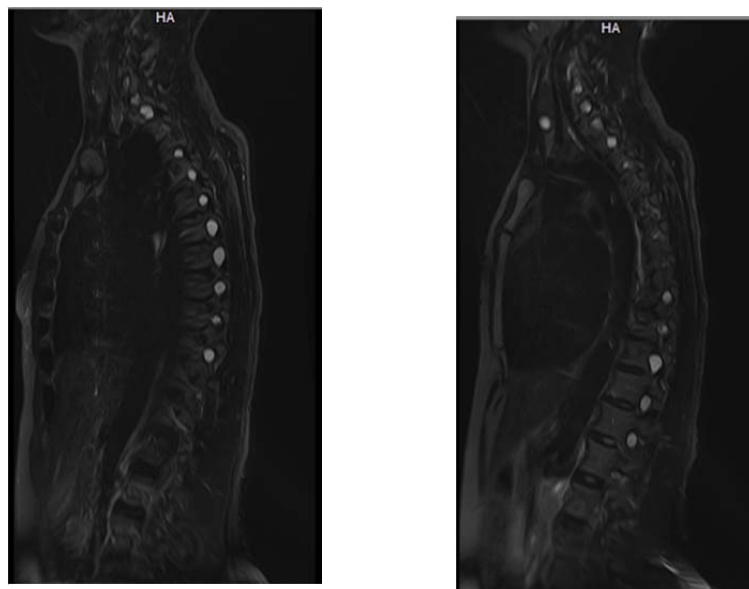
Here we describe the clinical case of a 61 years old female affected with a rare genetic pathology known as lateral meningocele syndrome (LMS) who developed a pathological condition that could be framed in the context of a multiple chemical sensitivity syndrome (MCSS) characterized by intolerance to several drugs, foods as well as environmental and chemical agents. The present patient was the subject of a previous publication in which the main features of the lateral meningocele syndrome were described. (11) However, in this study, as well as in all the other studies published in the literature on the lateral meningocele syndrome there is no mention of the coexistence of a multidrug intolerance condition. (11-20) To our knowledge this is the first case of a patient affected with LMS developing a MCSS.

Whether this association represent only an unlucky coincidence or whether the multidrug intolerance can be considered another distinctive features of the LMS is difficult to establish. Apart from this consideration, this is the first case in which such unusual association of pathologies has been described.

### Case Report

A 61 years old female affected with genetically diagnosed lateral meningocele syndrome came to our attention because a significant worsening of the quality of life mainly related to uncontrolled generalized, musculoskeletal pain. (Fig. 1)

**Figure 1 - Spinal MRI, sagittal projections T2 weighted sequences. The MRI documents the presence of multiple cervico-thoracic meningoceles.**



Clinical picture of the patient was characterized by a chronic, generalized pain syndrome associated with significant motor disability (moderate paraparesis, gait difficulties, necessity to be supported during the main daily activities).

Such clinical features were the consequence of either the natural evolution of the syndrome but were also the result of the iatrogenic lesion of the pudens nerve (neurologic bladder, perineal and groin-crural paraesthesia/pain) occurred during one of the several surgical procedures performed to close the cysts.

Furthermore other alterations including articular hypermobility and instability, facial abnormalities (hypertelorism, posterior ears rotation) were reported on personal anamnesis.

The patient was also screened for TGF- $\beta$  R1,2 and SMAD 3 mutations and underwent a total body angiographic computerized tomography to exclude the Loeys-Dietz syndrome.

During the years the patient became tolerant to the drugs used to control her pain. Moreover most of the analgesic drugs used were responsible for the occurrence of various degree of allergic manifestations. The list of drugs causing allergic reactions are here reported and also include other pharmacologic categories such as antibiotics, antidepressants and ophthalmic eyedrop:

- Opioids: (Tramadol, Oxycodone, Codeine, Morphine);
- Paracetamol;
- Antibiotics: (Quinolone, Betalactam, Fosfomicin);
- Gastroprotective drugs
- ophthalmic eyedrop (Simbrizine);
- Iodate contrast agent.

The spectrum of symptoms was extremely heterogeneous and included various degree of clinical manifestations such as headache, cold sweating, syncope, hyperosmia, muscular pain, articular fibro-myalgic like pain, circadian rhythm disturbances with insomnia, cognitive disturbances and memory loss, vertigo, gastralgia, dyspepsia, asthenia, skin rashes, urticaria. In some rare cases the drugs assumption caused dyspnea laryngospasm, bronchospasm, anaphylactic shock.

## **Discussion**

The lateral meningocele syndrome, nowadays recognized as being part of the connective tissue disease, is characterized by multiple Tarlov cysts protruding through the neural foramina of the vertebral column, generalized articular hypermobility as well as cardiovascular, facial and skeletal anomalies. The distinctive symptoms characterizing the syndrome is chronic osteo-articular pain. (11-20)

Clinical features and natural evolution of the lateral meningocele syndrome have not yet been completely defined. (11-20) This is due to a concomitance of reasons including the rarity of the pathology, the controversial and not completely understood genetic basis and the overlap with other connective tissue diseases. (12-15, 17-20)

The symptomatology of our patient was mainly characterized by a chronic, generalized pain syndrome associated with significant motor disability. Such clinical picture represents the result of the natural evolution of the syndrome but was also caused by the iatrogenic lesion of the pudens nerve (neurologic bladder, perineal and groin-crural paraesthesia/pain) occurred during one of the several surgical procedures performed in the attempt to close the cysts.

Until now, our patient is the oldest subject affected with lateral meningocele syndrome ever described in the literature. (11) Her clinical history represent a valuable resource to better understand the natural evolution of the pathology.

The syndrome is causing a progressive worsening of the psychophysical status of the patient mainly related to the increase of the pain component.

Since the beginning of the clinical manifestations of the pathology the pain control has represented the main objective to pursue. However, during the years, the pain therapy has demonstrated to be inefficient and hazard. In fact the drugs used caused several typologies of allergic manifestations including anaphylactic reactions.

All the clinical manifestations experienced by our patient could be framed inside the context of a multiple chemical sensitivity syndrome (MCS) or Idiopathic Environmental Intolerance to chemical agents. (1-10)

This rare, not still well defined syndrome, seems to be an organic chronic-reactive disease caused by the exposition to chemical agents at a concentration level that is generally well tolerated by normal subjects. The real existence and the correct definition of this syndrome is still a matter of discussion and, at the moment, well established diagnostic parameters have not yet been defined. (1-4, 6-8)

As a general rule, clinical manifestations appear after the exposition to environmental/chemical agents or drugs even if it is often difficult to demonstrate the temporal relationship between the exposition to a specific agent and the occurrence of the clinical manifestations. The clinical picture is characterized by several and aspecific disturbances, involving one or more apparatus and tend to regress with the removal of the involved agent. The nervous system is usually involved in association with at least a second organ or apparatus. The severity of clinical manifestations is variable, and goes from a simple subjective discomfort to a significant impairment of the life quality. Commonly reported symptoms include: generalized sick feeling sensation, fatigue, neurovegetative disturbances (nausea, tachycardia), neurologic disturbances (headache, vertigo, memory loss), psychiatric disorders (anxiety, depression), musculoskeletal pain, gastrointestinal symptoms (nausea, vomiting, dyspepsia, gastralgia) and respiratory manifestations (dyspnea, laryngospasm, bronchospasm). (1-10)

The syndrome seems to be more related to the individual susceptibility rather than the intrinsic toxicity of the specific agent itself. However other aetiologies have been proposed. (1-3, 6-8)

Some authors support the psychosomatic hypothesis. According to this hypothesis clinical manifestations of the syndrome could represent the stressful response of the individual to the anxiety linked to the exposition to unknown substances. This hypothesis is supported by the fact that many patients in which the syndrome was diagnosed also suffered from psychiatric pathologies (depression, anxiety). (2, 3)

The most widely accepted hypothesis is that the syndrome is caused by a genetic reduced capacity to metabolize xenobiotic substances or by the damaging of the enzymatic metabolic activity induced by the exposition to toxic substances, including the agent itself responsible for the reaction. (1-8)

The finding of such clinical features in a patient affected by the lateral meningocele syndrome makes the pain management protocol demanding and is contributing to further impair the already low life quality of the patient itself.

The patient is now undergoing pharmacogenetic studies in order to find a therapeutic alternative for the pain control.

Given the rarity of the lateral meningocele syndrome and the low number of case reported in the literature it is difficult to establish whether the association with the multiple chemical sensitivity syndrome is part of the natural evolution of this pathology or if it is only an extremely unlucky coincidence. In both cases our hope is that the genetic study will help us and the patient to find a concrete solution for the pain management.

### Conclusions

The coexistence of the multiple chemical sensitivity syndrome in a patient affected with a genetically diagnosed lateral meningocele syndrome represent an exceptional event. It is impossible to establish if the coexistence of such rare pathological entities is the result of the evolution of the primarily diagnosed syndrome or if it is only an extremely unlucky coincidence.

This is the only case described in the literature in which such pathological entities coexist in the same patient.

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