

Research Advances in Brain Disorders and Therapy

Research Article

Hamonet C, et al. Res Adv Brain Disord Ther: RABDT-104.

DOI: 10.29011/RABDT-104.100004

Cognitive and Psychopathological Aspects of Ehlers-Danlos Syndrome - Experience in a Specialized Medical Consultation

Claude Hamonet^{1*}, Pierre-Marie Schatz¹, Philippe Bezire², Lucette Ducret², Régine Brissot²

¹ Study and Research on Ehlers-Danlos Syndrome Group (GERSED) 205 Rue De Magenta, 40660 Moliets Et Maa, France

² Health Center ELLAsante 29bis rue d'Astorg 75008 Paris

***Corresponding author:** Claude Hamonet, Department of Medicine Paris-Est-Créteil University (UPEC) 8 rue du General Sarailh, 94100 Creteil, France. Tel: +33660687306 Email: pr.hamonet@wanadoo.fr

Citation: Hamonet C, Schatz PM, Bezire P, Ducret L, Brissot R (2018) Cognitive and Psychopathological Aspects of Ehlers-Danlos Syndrome - Experience in a Specialized Medical Consultation. Res Adv Brain Disord Ther: RABDT-104. DOI: 10.29011/RABDT-104.100004

Received Date: 26 April, 2018; **Accepted Date:** 03 May, 2018; **Published Date:** 09 May, 2018

Abstract

Patients with Ehlers-Danlos Syndrome (EDS) and doctors have great difficulty understanding each other. This common hereditary syndrome, which has the false reputation of being rare, is still unheard of by most physicians. If they are aware of it, their knowledge is usually fragmented, inaccurate or false. Average duration of patients' wandering is 22 years between the onset of the first recognized signs and diagnosis. Pain, mainly joint pain (95%) is a constant state for some patients. This defies doctors understanding who in many cases do not believe them. They are then sent on to find other diagnoses. Tiredness (97%), often very intense, is linked to laziness. Multiplicity of somatic clinical manifestations is surprising, and symptoms are all too often attributed to behavioral disorders. Working memory, attention, concentration and orientation problems are frequent and very often considered as psychiatric symptoms. Anxiety and hyperemotivity are usual. Dystonia (57% of cases) is responsible for worsening pain, joints and muscular disorders with sometimes impressive pseudo epileptic attacks of muscular contractions. Pseudo-paralysis, usually regressive, associated with proprioceptive disorders, can also be observed. The link with autism must be underlined, because of clinical pictures, close to the autistic spectrum, encountered in people with EDS and their families, but also because autistic patients with severe psychopathological disorders, treated in psychiatry, react favorably to treatments (compression garments and oxygen therapy) effective in Ehlers-Danlos disease.

Keywords: Autistic Spectrum; Asperger's Syndrome; Compressive Clothing; Cognitive Disorders; Dyspraxia; Ehlers-Danlos; Fatigue; Hypermobility; Oxygen Therapy; Proprioception; Rebel Pain

Introduction

Physician's Incomprehension. A Difficult Patient / Doctor Dialogue

Patients with Ehlers-Danlos syndrome and doctors have great difficulty understanding each other. «We all are made to feel foolish,» a patient association president told us 24 years ago. This common, hereditary syndrome, which has the false reputation of

being rare, is still unheard of by almost all physicians. If they are aware of it, their knowledge is usually fragmented, imprecise or false, based more on uncontrolled assertions and on prejudices than on objective and validated descriptions. Confusion is enhanced by everchanging and complicated classifications based on genetic testing, (5 nomenclatures have already been put forth). The last, published in 2017 [1] describes 13 different types that are not found in the extended clinical studies of the disease [2,3]. As a result, doctors hesitate greatly to come up with this diagnosis. Some of them reject, against all scientific facts, the very existence of the disease. For patients, this results in exclusion of effective treatments and opens the door to misdiagnosis with iatrogenic consequences, sometimes serious, even life threatening.

Such discrepancy between the illness, the patient and medicine makes it necessary to question the reasons for such a situation. Our experience is based on more than 5000 EDS patient's observations, followed in consultations for 24 years for most. Several series have been published: 644 in 2012 [4], 636 in 2017 [5], 853 in 2018 [6]. Repeated interviews with the patients allowed us to emphasize a singular symptomatic entanglement between somatic, psychological and affective expressions with a common denominator: proprioceptive disorder.

Diagnosis Wandering, A Very Important Factor of Patients' Psychological Suffering

Average duration of wandering, in our patients, is 22 years between occurrence of the first recognized signs and diagnosis. In fact, diagnosis could be made much sooner, in front of some manifestations such as swallowing disorders, constipation, fragile skin (abrasions, bruises), joint hyperlaxity, subluxations and even spontaneously occurring bone fractures, due to vitamin D deficiency in the first months of life. Another argument is that the father, the mother, and sometimes both have the syndrome's symptoms that are passed on to all children with an affected parent. Such findings, if known, would avoid false accusations of child abuse that are all too often observed [7,8].

Diagnosis disclosure is then a revelation that changes the life of the concerned patients. It highlights the cause of past avatars and restores coherence to the present symptoms, two of which are largely dominant, producing an asthenic-pain picture which is the most frequent clinical form of this disease.

Pain is mainly articular and periarticular (95% of 853 cases). It is a peculiar way for people to be, to exist. The whole body is painful. To the question "where do you hurt?", the answer is: "I hurt everywhere". Pain replaces sensation of position or movement of the body. This is the case of this Long Island (USA) Dr. Pradeep Chopra's patient who told us: "I do not know where my arm is, I try to move, I have pain, I find it". One of our patients, an adult, relates that as a child, she suffered a lot while running, but that it was for her, a "normal" phenomenon when she ran. To relieve her pain, she mentally "projected" it to a boy and suffered less. She thus intuitively discovered self-hypnosis techniques, effective on EDS' pain. Later, she did everything to ignore her body, "as if it were another person's body". The worst suffering is others' denial (acquaintances and doctors). This wandering, without relief of symptoms, is accompanied by frustration of not being heard, of being considered as confabulators, of being accused and blamed: "do not complain all the time!".

There is also fatigue (97% of 853 cases), often very intense, which is put on account of laziness, "make efforts!", "take hold of your hands!". In the asthenic-pain syndrome are added other symptoms that disrupt social life, marginalize and exclude.

Quickly breathless (82%), patients are uncertain on legs whose ankles easily twist. Knees recede, hips sometimes block. Patients also hit doorframes and tables corners, drop objects because of dysproprioception. "Do not be so clumsy", "be careful," they are told. They would be more than willing to do so, but they cannot manage visual proprioceptive disorder (83%) for the appreciation of distances, nor motor dysproprioception: the position of the feet (89%) must be vision monitored. They are criticized for "not keeping up", "moving all the time". Prolonged sitting position as well as standing are difficult to maintain. They must, however, solicit their body to feel it, to "exist".

The multiplicity of somatic clinical manifestations is surprising and is all too often related to behavioral disorders. Children have trouble controlling their bladder during sleep. They manage to be "clean" but often a few years late. These remarks can be extended to swallowing and phonation problems. Usual thermoregulation disorders (80%) result in discomforts that entourage misunderstands. Sensitivity to cold or, on the contrary, flushing, sweating unrelated to the outside temperature is often observed (73%).

Clinical Manifestations Are Not Limited to The Body. Cognition Is Concerned

This includes working memory (73%), attention (77%). The latter is responsible for the sign of jumping from one subject to the other with many side comments and difficulty to channel the patient's speech, which further complicate exchanges. Elsewhere, concentration is concerned, with difficulties in maintaining the same activity for a long time, or in poor temporal or spatial orientation with a very bad sense of orientation.

All of this can lead to learning difficulties that are clogged with dyspraxia, dysorthographia or dyslexia, which impede progress. They contrast with sense of observation, profound insight, language precocity, high intelligence quotient, high quality of reasoning that make it possible to succeed in class despite flaws (dysproprioception, fatigue, painful crises), to be very good at work and to be as creative with artistic gifts.

Affectivity, Anxiety, Depression and Ehlers-Danlos

"You are depressed, your MRI is normal, it's in your head". "It's a mood disorder", "Go see a psychiatrist or psychologist", "I am hospitalizing your daughter in psychiatry". These are doctors' words that have all too often been reported to us by patients. And yet, despite pain, fatigue and multiple other hindrances or functional limitations, most patients remain "combative", eager to fight and continue to live. The Beck depression test, systematically practiced, in our consultations, very seldom reveals depression (ongoing study). On the other hand, anxiety, well highlighted by Bulbena [9] emotional ups and downs, are very prevalent and

imply, when possible, a psychological accompaniment and, if necessary, light medication, avoiding antidepressants too powerful. In fact, the best psychotherapy is the discovery of the disease and the cause of symptoms, previously poorly interpreted and causing anxiety. Relief is obtained by appropriate therapy, including orthoses and proprioceptive clothing [10], as well as intermittent oxygen therapy [11].

Dystonia and Proprioception

Dystonia or “Parkinson’s syndrome” is often found in EDS (57% of cases, in our patients). It is at the origin of many misunderstandings by confusion with neurological or psychiatric diseases. This disruption of automatic movement control is one of the consequences of dysproprioception, disruption of signals sent from the periphery of the body to basal ganglia or extrapyramidal system. It is sensitive to L-Dopa or its precursors at very low doses and injections of botulinum toxin but also to oxygen therapy. It accentuates pains, joint disorders, clumsiness and fatigue. It translates into jolts, tremors and sometimes spectacular contracture crises confused with hysteria. We believe that dystonia shares responsibility for dysproprioception in the muscle, weaknesses and “pseudo-paralysis” of hemiplegic, paraplegic or quadriplegic topographies that we have often observed in our patients. These clinical pictures, devoid of MRI signs, are interpreted as a manifestation of either dystonia or dysproprioception, or both. They surprise and confuse doctors, but they are real. Most often, they regress in a few days or weeks. Rarely, we see them persist despite treatments. Elsewhere, these are “pseudo epileptic” tonic seizures without EEG sign. It is also worth mentioning brief losses of contact with reality that are part of EDS picture and are confused with temporal epileptic seizures.



Figure 2: The clinical lesson of Jean Martin Charcot at the Salpêtrière hospital. Table by André Brouillet (1887).



Figure 3: Charcot’s drawing of one of her patients in hysterical crisis (dystonic?). Excerpt from the work of Catherine Bouchara: “Charcot a life by the image”, Editions Philippe Rey, Paris 2013.



Figure 1: Great generalized dystonic crisis in the waiting room Positive effect of oxygen.

Autism Spectrum Borders (ASD)

In EDS consultations, it is common to find, patients with awkward social contacts and withdrawal, close to what is described in autism for which we speak, now, of autistic spectrum. Diagnosis of autism is often made with consequences of psychiatric type of care. Moreover, there is a very important hyperactivity which directs towards the child psychiatrist. Furthermore, our collaboration with Professor David Cohen's department revealed to us that some patients treated for severe autism showed clinical manifestations (hypermobility, skin fragility, hemorrhages, constipation) that were hereditary, which led us to make the diagnosis. of EDS. The efficacy in these patients hospitalized in psychiatric ward, of treatments used in EDS (compressive clothing with proprioceptive effects, oxygen therapy) provides an additional argument in favor of a link between the two pathologies [9,10].

Conclusions

In recent years, EDS clinical description has been considerably enriched with cognitive and psychopathological aspects that have completed a clinical picture that was, initially, and still is, too much dominated by articular hypermobility and skin stretchability. The initial description (Ehlers) of hemorrhages having been unfortunately occulted, despite the risks patients run. Highlighting [11-13] the importance of proprioception disorders, understood as a true "sixth sense" [14], has considerably changed its diagnosis and treatments. It is proprioception that permanently brings to the neurological system of perception and control, the internal, external and environmental sensations of the individual. It is the connective tissue, distributed throughout the body, except the brain, representing 70% of its constituents, which is responsible for proprioception disturbances. Indeed, Connective tissue, particularly fascia, are the supports of the nervous system sensors / informers. Genetically modified, their biomechanical qualities (deformation, stretch, resistance to pressure and crushing, loss of elasticity ...) will disrupt the signals sent to neurological regulatory centers either towards exaggeration (hypersensoriality) or decrease (hyposensoriality or even absence of sensations). Pathophysiology of EDS thus introduces a real revolution in conceptions of the interactions of the body and the mind in contrast to Freudian "psychosomatic". Here, it is peculiar bodily and environmental sensations that influence cognitive and emotional functions. The best way to illustrate it is to give the floor back to concerned people with EDS.

"I do not have skin on my arms anymore" "I do not feel the limits of my body anymore". "It's like my body is evaporating." "I cannot locate myself in space and locate others, I stick to them". "My body does not obey me". During a painful "pseudo-paralysis": "part of my brain says I must move, other pieces of my brain tell

me not to move, I have to fight myself."

Conflict of Interest: The authors state that they do not have a conflict of interest

Acknowledgements to Ehlers-Danlos french associations : «Une vie de libellule», «Vivre avec le SED», «Ensemble pour Manon», «Un coeur pour le SED».

References

1. Castori M, Brad Tinkle B, Levy H, Grahame R, Malfait F, et al. (2017) A Framework for the Classification of Joint Hypermobility and Related Conditions. *Am J Med Genet C Semin Med Genet* 175C: 148-157.
2. McKusick VA (1996) the Ehlers-Danlos syndrome, in *Heritable disorders of connective tissue*, The C.V. Mosby Company, Saint-Louis.
3. Grahame R (2016) Le syndrome d'hypermobilité, Joint hypermobility syndrome. *Journal de réadaptation médicale* 36 : 7-8.
4. Hamonet A, Ravaut P, Villeneuve S, Gompel A, Serre N, et al. (2012) Statistical analysis of clinical signs from 644 patients with a Beighton scale $\geq 4/9$. The 1st International Symposium on the Ehlers-Danlos Syndrome 8-11 September 2012, Ghent-Belgium.
5. Hamonet C, Brock I, Pommeret St, Pommeret S, Baeza C, et al. (2017) Syndrome d'Ehlers-Danlos (SED) type III (hypermobile): validation d'une échelle clinique somatosensorielle (ECSS-62), à propos de 626 cas Ehlers-Danlos Syndrome type III (hypermobile): clinical somatosensory scale (SSCS-62) validation, about 626 patients. *Bull Acad Natle Méd* 201: 405-415.
6. Hamonet C, Brissot R, Gompel A, Baeza-Velasco C, Guinchat V, et al. Ehlers-Danlos Syndrome - Contribution to Clinical Diagnosis - About 853 cases. accepted by *EC neurology*.
7. Holick, ML (2017) Multiple fractures in infants who have Ehlers-Danlos/hypermobility syndrome and or vitamin D Deficiency A case series of 72 infants whose parents were accused of child abuse and neglect. *Dermato-Endocrinology* 9: e1279768.
8. Hamonet C, Brissot R, Amoretti R, Bahloul H, Jouvencel M, et al. (2018) Bone fragility of infant with an Ehlers-Danlos syndrome, From the diagnostic error to the miscarriage of justice. *Symposium on Ehlers-Danlos cognitivity and psychopathology*. March, 17th 2018. Hôpital de la Salpêtrière, Paris.
9. Bulbena A, Baeza-Velasco C, Bulbena-Cabre A, Pailhaz G, Critchley H, et al. (2017) Aspects in the Ehlers-Danlos Syndromes. *American Journal of Medical Genetics Part C (Seminars in Medical Genetics)* 175C: 237-245.
10. Dupuy EG, Leconte P, Vlamynck E, Sultan A, Chesneau C, et al. (2017) Ehlers-Danlos Syndrome, Hypermobility Type: Impact of Somatosensory Orthoses on Postural Control (A Pilot Study). *Send to Front Hum Neurosci* 8: 283.
11. Hamonet C, Vienne M, Leroux C, Letinaud MP, Paumier J, et al. (2015) Manifestations respiratoires dans le Syndrome d'Ehlers-Danlos (SED). Nouveaux apports thérapeutiques. Respiratory manifestations in Ehlers-Danlos Syndrome (EDS). New treatments options. *Journal de réadaptation médicale* 2015 : 1-6

12. Jausaud R (2018) Hypermobility, posture, psychological links, Fourth International meeting Ehlers-Danlos, Cognitive and psychopathological aspects Quatrième colloque international Ehlers-Danlos. Aspects cognitifs et psychopathologiques, Marsh 17 2018, amphitheatre Charcot, Salpetriere hospital Paris.
13. Quercia P (2018) The link between Learning disability and dysproprioception. The link between Fourth International meeting Ehlers-Danlos, Cognitive and psychopathological aspects Quatrième colloque international Ehlers-Danlos. Aspects cognitifs et psychopathologiques, Marsh 17 2018, amphitheatre Charcot, Salpetriere hospital Paris.
14. Berthoz A (1997) le sens du mouvement Odile Jacob, Paris 1997.