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Case Report

Lateral Amyotrophic Sclerosis and Intestinal Microbiota Transplantation

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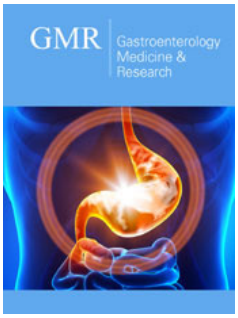

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Abstract

Keywords: LAS: Lateral Amyotrophic Sclerosis; IMT: Intestinal Microbiota Transplantation; FMT: Fecal Microbiota Transplantation; MS: Multiple Sclerosis

Summary

Male, 47 years old. For 26 years, he has a lack of extension and elevation of the right thumb. It extended to the whole hand, carpus and forearm. When he was child a vehicle hit his head, at the right temporal level, he did not lose consciousness. He practiced Extreme Soccer 2-3 hours a day. From 10 to 15 years old. In 1987 spider bite on the right leg. He made black process, of 10 centimetres that it took to heal. In 1998, with the problem he worked at 4 thousand meters high. The disorder did not advance. In 2000, car accident. In 2004, diminution of the strength in the left ankle. One year later the right. He cannot stand on tiptoes. Contracture in the legs, as well as the right arm. Pain in cervical 7th, when bending over and incorporating the neck. Two Magnetic Resonances, with probable cervical hernia, small. Electromyography, normal. Genetic studies, No. HIV negative. Leukaemia of T lymphocytes in humans. Polio and West Nile virus not performed. Thereafter they treated him with ampules of Complex B, intramuscularly, daily and the process did not progress. Apitherapy once a week (60 bee stings), removing the sting. Lost weight on their forearms and ankles. It does pedal and cycling.

On physical examination, only lack of hyperextension in fingers of the right hand, as well as of the carpus on the same side. Standing tends to fall. He cannot stop spiking and get dizzy. The fingers of the right hand are hypotrophic. Frequent contractures in both legs. He has never taken medication. Regarding ELA, after 12 months of evolution Intestinal Microbiota Transplantation (IMT), comments on the following:

1. The evil progresses slowly especially in the legs, which is not bad, it could be worse, although ideally it should remain stable. The balance and strength of the front muscles of the thigh (above the knee) that support the weight when walking, is where progress is noticed.

2. The good thing is that I keep doing my activities in a more or less normal way (work, driving, dance, walk and bit clumsy. Ride a bicycle, Have sexual relationships). Of course, because of the ankles and legs I left football and other physical activities.

However, as an experience after the intervention, I can attest that my digestive system has worked better, my intestinal flora more resistant (less loose stomachs).

Diagnostics

1. Lateral Amyotrophic Sclerosis (LAS of right predominance)
2. Anxiety (30 Points, Hamilton scale)
3. Functional digestive disorder type IBS, variety, diarrhea

4. Digestive functional disorder Gastrointestinal pain of centrally mediated disorders

5. Functional digestive disorder type Constipation type

6. Lactose intolerance

7. Over-weight Grade-II

8. Benign prostatic hypertrophy

9. Bilateral pterygium

200ml of microbiota are applied in ascending colon, 100ml. In transverse colon and 200ml. In descending colon. Only spastic colon was found. We tried to pass the ileocecal valve, to deposit microbiota in terminal ileum and could not. Two days after the IMT, bowel movements normalized. There were burps that gave way spontaneously. Thirteen days later, abdominal pain decreased 75% and diarrhea was withdrawn. Anxiety decreased to 13 points on the Hamilton scale (17 points, less). The abdominal girth was 37.007 inches, decreased to 34.252. Regarding LAS, after 12 months of evolution, the patient comments on the following:

1. Prescribe for 3 months Rebiot I, ingestible solution. Take one a day.

2. Lactobacillus Paracasei/Vitamin B-6, Bifidobacterium lactis (BB-12), Vitamin B-12; BB-12; FOS fibre, Inulin.

Discussion

Lateral Amniotrophic Sclerosis (LAS) Lou Gehrig's Disease

It´s a neurodegenerative process that affects motor neurons and other neuronal cells, causing severe disability and eventually death due to respiratory failure [1]. LAS affects approximately 1 in every 400 adults of Western European descent, which makes it the most common degenerative disease of the motor neuron network. From 85 to 90% of cases occur sporadically. In populations of European extraction, the most frequent cause is the repetition of the C9orf72 hexanucleotide expansion, C9orf72. Other genetic variants are also associated with earlier age at onset and faster progression; for example, the mutated SOD1 gene of the A4V variant [2].

Although its pathogenesis is not fully understood, it has been attributed to defects in RNA processing, as well as to the accumulation of protein aggregates in nerve cells and to defects in the intestinal microbiota.

There are no specific diagnostic tests, plus electromyography and genetic tests can support the diagnosis, [3] even though this remains clinical and is based on progressive painless weakness and dysfunction of the upper and lower motor neurons in the physical examination [4].

Although it does´nt refer precisely the LAS but to Multiple Sclerosis (MS). Borody [5-7] points out that: with respect to other possible treatable conditions, FMT tests are currently lacking. Isolated cases of FMT response include MS. And add. Infectious cause has been speculated in MS, although the potential of gastrointestinal pathogens to exert neurological effects remotely (as has been seen with many Clostridium species) has not been considered probable. Borody et al. [8] reports three wheelchair patients with MS treated with FMT for constipation. Intestinal symptoms resolved after FMT; however, in all cases, there was also progressive and dramatic improvement in neurological symptoms, with the three patients, recovering the ability to walk without help. Two of the patients with previous permanent urinary catheters underwent restoration of urinary function. In one of the three patients, the follow-up Magnetic Resonance, 15 years after the FMT, showed interruption of the progression of the disease and "no evidence of active disease".

People with MS have a different intestinal microbial community and increased translocation of low-grade bacteria from the intestines to the circulation. The observed change in intestinal bacteria in patients with MS regulates the immune functions involved in their pathogenesis [9,10]. Food has been considered the cause of the problem, as well as the intestinal microbiota, already mentioned [11,12]. Mirza et al, [13] point out that individuals with MS have distinct microbiota and, increased translocation of bacteria from the intestines to the low-grade circulation.

But what evidence exists to link the LAS with alterations of the Microbiota. We have the case of Wang [14] who comments that the gut microbiome has played a crucial role in the bidirectional axis of the brain and intestine that integrate the activities of the intestinal and central nervous system (CNS) and, therefore, the concept of the microbiome axis emerged -intestine-brain. The studies reveal how various forms of neuro-immune and neuro-psychiatric disorders are correlated or modulated with variations of microbiota products and antibiotics and exogenous probiotics.

And he concludes, the microbiome positions the peripheral immune homeostasis and predisposes the susceptibility of the host to autoimmune diseases of the CNS, such as Multiple Sclerosis. The neuronal, endocrine and metabolic mechanisms are also critical mediators of the microbiome-CNS signaling, which are more involved in neuro-psychiatric disorders such as autism, depression, anxiety, stress. But it´s not only this author who ratifies the close relationship between Intestinal Microbiota and CNS. This relationship is also emphasized in other works [15-19]. IM has been related to different autoimmune diseases and there is evidence of its impact on neurodegenerative processes, research being directed towards which bacteria are the ones that produce these problems [20-24].

Summary

They review how dysbiosis contributes to symptomatology in autoimmune processes, including multiple sclerosis (MS) [25-28]. And so, we are facing numerous articles that abate the dysbiosis of the Intestinal Microbiota as the genesis of neurological alterations [29-32].

Conclusion

The IMT is beneficial in our patient and, other authors, as well as us describes success cases, we consider that it is a procedure that should not be disregarded [33-38]. The IMT is innocuous. Our patient presented burps, which yielded spontaneously. The LAS has not evolved in 6 months, although we must continue the follow-up, to set a definitive criterion. Most of the comorbidities subsided, which forces us to conclude that in addition to the primary neurological process, the IMT usually corrects most of the comorbidities, providing the patient with a higher quality of life. Bases and success stories appear in the literature, which concludes the importance of the IMT.

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