Pseudomembranous enterocolitis cured with three intestinal microbiota transplantations

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Summary

We present a unique case of a 82 years old women, with this newly described condition called “pseudomembranous enterocolitis cured with three transplants of intestinal microbiota (imt).” We evaluated the case of Gaw, who had a perforates sigmoid diverticulum 10m days ago and had surgery with sigmoid resection, colostomy and hartmann’s pouch. Her progress was good. However, she was given metronidazole and vancomycin, antibiotics that caused severe diarrhea and toxic state, a week postoperatively. Histopathological study of surgical specimen showed colonic mucosa extensively ulcerated and granulation tissue, fibrin and abundant neutrophils. Submucosal edema and acute periserositis. The muscular and mucosal layer had not alterations. A diagnosis of pseudomembranous enterocolitis (pm) was made. The patient had a toxic state, semi-conscious, diaphoretic and extensive erythema in the right forearm, with minor erythema at the left forearm and face, as well as perineal erythema, third degree edema in lower limbs, dehydrated and chest x-ray showed interstitial pneumonitis. She had a typical case of pm, and proceeded to perform an intestinal microbiota transplantation (imt) from healthy donors at clinical and laboratory studies. After that imt we performed colonscopy, which showed at the course of transverse and right colon multiple plaques of whitish, cotton-like appearance, which protruded on the mucosal surface. This appearance were also seen at the left colon. We applied 400 ml. Of imt in the right colon and 100 ml at the hartmann’s pouch of rectum. At the colonscopy we placed a foley’s catheter with an inflated balloon 20 ml. Also, solid petroleum jelly was left to prevent imt elimination. We removed all antibiotic treatment and replaced with probiotics, through the nasogastric tube.

Three day later the patient had a better general condition, was conscious, with erythema limited to forearms, face and perineum, the lowers limb had no edema and she was better hydrated.

The second imt was performed with another 400 ml. Of microbiota in right colon and 100 ml. At the hartmann’s pouch. To prevent imt a 20 ml. Inflated balloon colostomy (foley’s catheter) sealed with solid petroleum jelly.

Three days later, a new imt was required under the same conditions as the former two imt. On this occasion the patient was fully aware, speaking and responded correctly to our questions. She had no erythema in her body, no edema at her legs and her chest x-ray had no pneumonitis, and showed only a small leak at the base of right lung.

Further treatment without antibiotics, was with symbiotic by mouth and was under another treating team.

We reviewed the literature, and we hope to encourage colleagues to use this procedure, which had similar results in the world.

Presentation of the case

Gaw, female, 82 years old with a history of sigmoid diverticulum perforation, peritonitis treated with sigmoid resection, colostomy and hartmann’s pouch were given the following antibiotics: metronidazole, vancomycin which caused pseudomembranous enterocolitis. The patient required 3 intestinal healthy microbiota transplantations to showed improvement, both at clinical and colonic mucosa-colonoscopy visualized-until total remission. Histopathologic studies showed extensive ulcerated colonic mucosa with granulation tissue, fibrin and abundant polymorphonuclear cells and, submucosal edema, acute peri-serositis without muscular and mucosal alterations viable resection margins.

Diagnosis: Pseudomembranous enterocolitis (Figures 1-6).

Discussion

The main conditions that is treated with imt is clostridium difficile infection, as well as recurrence [1]. Eisman et al. [2] were the first to carry out this procedure with good results. since them, numerous cases have been described in the world literature, many doctors performed imt successfully, broody [3-8] observed that a second or in needed third transplantation is necessary to get good results, just as happened in our patient. Broody not only directed his attention to C. difficile, goes a little further and used imt in irritable bowel syndrome, myoclonus-dystonia, ulcerative colitis and chronic fatigue syndrome [9].

Numerous authors joint on the imt, drekonia confirms positive results [10] and showed a pair of randomized controls. studying series of 28 and 5 cases, detected a recurrence in 2 patients, it concludes that imt may have a significant effect with a few short-term adverse effects for recurrent CDI. Evidence in insufficient on ft for refractory or initial CDI treatment and weather not effects vary by donor, preparation or delivery method. Felipe moscoso in Chile points out the incomparable experience with a case in which he performed the procedure, with excellent results in a 53 years old woman. observed in its revision up to 90% of cure [11-14]. The case presented was one of the two analyzed, with recurrence of the infectious process.

Moayyedi in Australia also performs a randomized study with promising results in the reviewed literature [15].

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Figure 1. First Transplant. Throughout the course of the transverse and right colon were observed multiple plaques of whitish, cotton-like appearance. They protrude to the surface of the mucosa. The same happens in the left colon.

Figure 2. Third Transplant. The transverse and right colon are normal.

Figure 3. Large erythema in right forearm.

Figure 4. The erythema has disappeared.
occurs in about 92%, with adverse effects being uncommon and deaths are not usually due to the process, but parallel problems. The favorable changes that appear in the microbiota after transplantation have been documented [23-25], imt is one of the most commonly used procedures as emergency treatment for \( C. \) difficile infection, being imposed on other systems such as the use of monoclonal antibodies directed against toxin a and b, \( C. \) difficile vaccination [26]. imt is increasingly adopted by groups that treat patients with \( C. \) difficile infection, since the cure is more than 90%, as reported in multiple centers. in the procedure it is preferred to use the upper and lower digestive tract, through the rectum, using endoscope, since on the other hand it is visualized and corroborates the diagnosis, on the other hand, it can show some other pathologies and if possible treat them [27-29]. Although until recently the imt was very questions, at present no group is opposed. they accept it and more centers use it. When they went, only 150 cases the questioning was severe [30]. Now, with hundreds of patients usefully treated, few institutes do not recommend imt and its benefit [31,32].

**Conclusion**

It is confirmed once again that the most favorable treatment, when the conventional methodology in \( C. \) difficile infection fails, is the intestinal microbiota transplantation. Sometimes it is necessary to carry out up to three transplants to obtain good results, as there was need to do so, in the present case. The response is usually immediate o, well at the end of the third transplant, given the excellent results of imt, we encouraged other author to carry out this procedure, minimally invasive and with highly reliable results as positive percentages, above 95%.

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