



Ms GOMEZ GIL Veronica

University of Alcalá Dept of Medical Specialities Ctra Madrid-Barcelona, Km 33.600 28871Alcala De Henares Spain 918854540 918854885 veronicaggil@gmail.com

Topic : Peritoneal Imaging (preoperative and intraoperative and post-operative)

Authors and addresses : Gómez-Gil V1, García-Honduvilla N1, Rodríguez M2, Buján J1, Bellón JM2

Department of Medical Specialities¹ and Department of Surgery², Faculty of Medicine, University of Alcalá. Networking Research Centre on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, Spain.

Presenting Authors : Gómez-Gil V

Real-time monitoring of the adhesion formation/reformation process by sequential laparoscopy

Adhesions that form in the peritoneal cavity following surgery continue to be the primary cause of postoperative intestinal obstruction and may also produce infertility in women and chronic abdominal pain. Nowadays, there is much controversy over the adhesiogenic process and the long-term evolution of the adhesion tissue. The aim of this study was to follow the process of adhesion formation by sequential laparoscopy and to analyze the effectiveness of adhesiolysis in preventing adhesion reformation.

The experimental animals used were 16 male White New Zealand rabbits weighing 3000-3200 g. Animals were anesthetized and subjected to a longitudinal laparotomy performed along the midline. To the left of this incision, a 5 cm x 3 cm polypropylene mesh was placed on the parietal peritoneum and fixed using 6 transmural stitches of 4/0 polypropylene. Two study groups were established: Group I (control) (n=8) animals subjected to the mesh placement surgery; Group II (n=8) animals subjected to adhesiolysis 3 days after the mesh placement surgery. Adhesions to the implants were laparoscopically determined 3, 7, 14 and 90 days after surgery. At 90 days postimplant, the animals were sacrificed and samples harvested for morphological studies.

The percentage adhesion scores obtained for both groups 3 days postsurgery did not differ significantly. The adhesions were mostly loose, composed of a highly vascularized omental tissue. In control group, adhesions appeared as early as 3 days postimplant and were laparoscopically observed to stabilize during the first week. Beyond this time, no changes in these adhesions were detected on laparoscopy. In group II, no reformation was observed after adhesiolysis. Percentage adhesion scores revealed significant differences between the two study groups at 7, 14 and 90 days postimplant. At 90 days postsurgery, the resection areas were lined by a stable layer of mesothelial cells and showed a high degree of neoangiogenesis.

a) Adhesion formation was laparoscopically observed to stabilize between 3 and 7 days; b) Adhesion tissue resection and removal during the critical period of the adhesion formation contribute to reduce the mid- and long-term adhesion reformation.