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Effects of distal splenocaval shunt on gastric mucosa in cirrhotic portal hypertension in rats

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Abstract The functional changes of the gastric mucosa in hapetic cirrhotic portal hypertension after distal splenocaval shunt (DSCS) were observed in rats. It was found that gastric mucosal blood flow and the levels of glycoprotein and prostaglandins of the gastric corpus and antrum were significantly lower in those rats with hepatic cirrhotic portal hypertension than in those of the control group. After DSCS, these parameters of the gastric corpus were gradually increased and were significantly higher than those before DSCS in the 5th week postoperatively. And these parameters of the gastric antrum were remarkably decreased in the early stage after DSCS and gradually recovered to the preoperative levels. These findings suggest that under hepatic cirrhotic portal hypertension, the defensive capacity of the gastric mucosa was weakened to result in pathological changes and DSCS can selectively improve the microcirculation and the functions of the gastric mucosa of the gastric corpus. So it is recommended that DSCS be employed for the treatment of the lesions of gastric mucosa in case of cirrhotic portal hypertension.

Key words hepatic cirrhosis; portal hypertension; gastric mucosa; distal splenocaval shunt; rat

个案与短篇

急性脊髓损伤的成鼠脊髓腔内植入大鼠胚胎脊髓的方法研究

Studies on the method of rat embryonic spinal cord transplantation to the acute injuried spinal cord in adult rats

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目前对脊髓横断伤后引起的截瘫,尚无有效的治疗方法[1],为了解决这一难题,国内外学者开展了广泛的研究。由于胚胎神经组织的分化程度较低,因而,有些学者采用胚胎脊髓植入的研究方法作了大量的工作[2],我们的实验结果表明:植入的效果除了与胚胎脊髓的选择有关外,而移植的技术操作方法也十分重要。本文将胚胎脊髓植入急性脊髓损伤的成鼠脊髓腔内的方法的技术要点介绍如下。

1 材料与方法

1.1 胎鼠及胎鼠脊髓的制备

选用体重250 g~280 g的健康大鼠,按2:1的雌雄比例同笼过夜,从次日起,每天上午用湿润的小棉试子行阴道涂片检查,在显微镜下观察判断妊娠,查出精子雌鼠为受孕鼠,查出精子当日为雌鼠妊娠零天,次日为妊娠第1天[3]。将受孕雌鼠分笼饲养,待14 d时,将受孕母鼠用25%的乌拉坦(1.25 g/kg)腹腔麻醉,无菌操作下,从子宫角将粉红色的胚胎逐个取出,放置于载玻片上,在手术显微镜下用微型血管钳深夹胚鼠背部,取出颈胸段脊髓组织,仔细剔出其中相接结缔组织及骨组织等,取下一段长约3 mm的纯净胎鼠脊髓组织保存于4℃林格氏液中,待受体鼠脊髓盲洞造好后立即植入。

1.2 受体大鼠脊髓的致伤

选用体重200 g左右的健康大鼠,雌雄各半,分别用浓度为25%的乌拉坦腹腔麻醉,背部剪毛后再用7.5%的硫化钠水溶液脱去残毛,无菌操作下,逐层切开组织,从T_{13}~L_1,用蚊式钳从椎间隙处开始咬除椎板,显示腰膨大,在手术显微镜下纵向切开硬脊膜约0.5 mm,用虹膜刀沿脊髓后动脉半切左侧脊髓,并用虹膜刀适度旋转搅毁局部脊髓组织,用吸引器吸出搅毁的脊髓组织,造成半侧深达腹侧脊髓硬脊膜2 mm的盲洞。

1.3 胚胎脊髓植入成鼠脊髓损伤的脊髓腔

用注射器接上玻璃针头,谨慎吸出保存在冰冻林格氏液中的新鲜脊髓组织,小心地植入已造好的脊髓盲洞内,应避免注入气泡和引起出血,确认植入后,用8-0无创缝合线,间断缝合硬脊膜及各层组织,上述过程应在严格无菌条件下完成。

2 结果

本方法可满足大鼠胚胎脊髓植入急性脊髓损伤的成鼠脊髓腔内的实验研究的需要,通过光镜和电镜对移植物植入后不同时间的取材检查,可观察到从半切洞的方式损伤大鼠脊髓后,发生了出血水肿、变性坏死及囊腔形成等典型的病理变化

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pulmonary cells injury. Surg Gynecol Obstet, 1988; 167: 92
5 Goldblum S E, Brann T W, Ding X. Lipopolysaccharide (LPS)-binding protein and soluble CD14 function as accessory molecules for LPS-induced changes in endothelial barrier function. J Clin Invest, 1994; 93(2): 692
6 王 毅,朱佩芳,王正国.内毒素对内皮细胞钙-钙调蛋白复合物的影响.第三军医大学学报,1992; 14(4): 355
7 Wenger A, Pape H C, Banter C *et al*. Ascorbic acid reduces the endotoxin-induced lung injury in awake sheep. Eur J Clin Invest, 1994; 24(4): 229
8 Sawhney R S, Bone R C. Endotoxin alters the expression of extracellular matrix proteins by cultured endothelial cells. Cellular Mol Biol Res, 1993; 39(6): 589
9 Supinski G, Nethey D, Dimarco A. Effect of free radical scavengers on endotoxin-induced respiratory muscle dysfunction. Am Rev Respir Dis, 1993; 148(5): 1318

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Endotoxin-induced pulmonary pathological changes and the role of polymorphonuclear neutrophils in the process of injury

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Abstract The pulmonary pathological changes in rats in the 1 h, 3 h, 5 h, 12 h, 24 h, 48 h and 72 h after the injection of lipopolysaccharide (LPS, group L) or nitrogen mustard and LPS (group NL) were observed with optical microscope, electron microscope and image analysis. The pathological changes in the lungs in group L were as follows: (1) Congestion, hemorrhage, edema and atelectasis of the pulmonary tissue; (2) Accumulation and degranulation of polymorphonuclear neutrophils (PMN) and platelets; (3) Swelling and necrosis of endothelial cells; (4) Degeneration of alveolar epithelial cells and the subsequent proliferation of type Ⅱ alveolar epithelial cells. These changes could be divided into circulatory disturbance phase, degeneration-necrosis phase and injury-repairing phase. The pulmonary pathological changes occurred more slowly and less severely in group NL than those in group L. Our findings suggest that PMN plays an important role in the process of pulmonary injury induced with LPS.

Key words pulmonary damage; endotoxin; polymorphonuclear neutrophil; rat

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过程,及胚胎脊髓在损伤脊髓病理改变中除起到减轻了神经元和神经纤维的坏死变性程度,对损伤的神经元实施挽救作用外,还具有有效抑制病理囊腔的形成,可填补原发损伤造成的大块组织缺损,此外还防止了增生胶质细胞形成疤痕屏障,使之以一个较为理想的数量出现在损伤脊髓的修复过程中,明显地增加了再生神经纤维的数目。

3 讨论

本实验研究方法可用于观察胎鼠脊髓植入成鼠急性脊髓损伤的组织修复作用效果的研究,并能观察到胚胎植入脊髓后的不同时间的病理改变作用。

脊髓植入的全过程必须严格无菌操作,手术中应谨慎细心。

胚胎脊髓组织应分离纯净,结缔组织、骨组织等应剔除干净,否则会影响移植效果。

手术后作好抗感染、实验动物的饮食喂养等。

关键词 胚胎;脊髓损伤;髓腔
中图法分类号 R651.2

参考文献

1 韩风岳.脊髓神经组织移植研究.中国脊柱脊髓杂志,1992; (2): 4
2 李兵仓,李应玉,伍亚民等.胚胎脊髓对成鼠急性脊髓损伤的修复作用、光镜 CB-HRP示踪与还原银染法.中国脊柱脊髓杂志,1992; (4): 160
3 李兵仓,李应玉.大鼠胚胎脊髓植入对成鼠急性脊髓损伤的修复作用.第三军医大学学报,1993; 15(3): 203

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