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Changes of nitric oxide synthase and nitric oxide in the small intestine postburn in rats

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Abstract **Objective**: To explore the regularity of the changes of nitric oxide synthase (NOS) and nitric oxide (NO) in the small intestine postburn. **Methods**: The Wistar rats with 30% TBSA full thickness skin burns were employed to determine the activity of inducible NOS (iNOS) and constitute NOS (cNOS) and the amount of NO in the small intestine. **Results**: The iNOS activity and the amount of NO were significantly increased postburn and there was a positive correlation between them ($r = 0.95$, $P < 0.01$). However, the cNOS activity was remarkably decreased and it was not positively correlated with amount of NO ($r = -0.61$, $P > 0.05$). **Conclusion**: The changes of NO in the small intestine are mainly affected by iNOS activity and the changes of the activity of iNOS and cNOS are related to some pathological changes in the small intestine postburn.

Key words nitric oxide; nitric oxide synthase; intestine; burns; rat

个案与短篇

食道异物(针)移行颈内静脉一例报道

A case report of a swallowed needle migrating from esophagus to the internal jugalar veins

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患者女, 48岁, 于1994年12月23日入院。主诉因误吞金属异物, 咽部剧疼8 h, 曾在当地县医院反复用食道镜检查, 未发现异物, 转入我院后拍颈部正侧位X线片, 证实金属异物为缝针, 在第六颈椎平面食道入口处。即在局麻下行食道镜检查, 在距门齿14 cm处发现缝针位于食道入口前壁, 横位。钳夹异物, 滑落, 且患者不能忍耐, 即采用气管插管全麻, 再次放入食道镜寻找异物, 未发现异物。术后再拍X线片, 见缝针尾部1/3已断, 余2/3已穿出左侧食道壁, 且下移至第七颈椎平面, 食管周围未见有明显脓肿形成。次日在全麻下行左侧颈侧切开, 暴露气管食道构, 分离颈动脉鞘, 见食管周围脓肿已形成, 破裂后吸出脓液

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体结构,又可借助肝非实质细胞产生的大量肝细胞生长因子,更好地发挥生物人工肝的生物合成作用,符合Nyberg等[8]提出的理想的体外生物人工肝支持系统是肝细胞-肝非实质细胞混合培养细胞的观点。

(参加本工作的还有丁健、刘国栋、谭朝霞同志,本院肝胆外科中心段恒春、董家鸿老师协助建立动物模型,特致谢意)

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Application of cultured human liver cells in bioartificial liver*

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Abstract **Objective**: To explore the possibility of using cultured human hepatocytes and non-parenchymal liver cells to establish an extracorporeal bioartificial liver support system (EBLSS) to provide a support treatment for fulminate hepatic failure (FHF). **Methods**: The two-stage perfusion method was employed to isolate and culture the hepatocytes and non-parenchymal liver cells and then the aggregates were put into a hollow fiber bioreactor as the main part of EBLSS. Their efficiency was assessed by the changes of ammonia in anhepatic dogs. **Results**: Hepatocytes and nonparenchymal liver cells with a viability of 96% formed multicellular spheroids which suspended in media by stirring at regular intervals and retained typical morphological appearance and albumin secretion. After treatment with EBLSS for 5 hours, anhepatic dogs had significantly lower serum ammonia as compared with the controls. Meanwhile, the cells still maintained a good viability. **Conclusion**: The human hepatocytes cultured with aggregate method can be used in bioartificial liver to play an optimal supporting role in FHF.

Key words cell culture; liver cell; bioartificial liver

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约10 ml,逐层寻找颈6~7平面,未发现异物。立即术中拍片,见异物已上移至颈5且变为纵向位。延长切口至颈5平面反复查找,未见异物,最后在颈内静脉内扪及缝针,缝针完全在静脉内,将缝针刺破静脉壁,取出异物,缝合静脉壁。术后大剂量抗菌素抗感染,7 d后拆缝线,伤口痊愈出院。

讨论

食道缝针异物具有游走性特点[1]。本例异物最初位于食道内,经手术刺激,吞咽及颈部肌群牵拉,使异物向外移位,最后进入颈内静脉实属罕见,更增加了术中寻找异物的难度。复习近年国内外文献,未见同类报道。回顾我科近10年的经验,我们认为食道缝针异物的患者应尽早在全麻下行食道镜检查[2],取出异物,必要时术中拍X线片以准确定位。

关键词 异物游走;食管异物
中图法分类号 R768.22

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