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plasma from patients with bone fracture on the ICBA, O_2^- and SG of normal PMNs and the specific blocking efficiency of anti-human C_3C_5 serum (AHC_3C_5S) on the harmful plasma of patients with bone fracture were studied in vitro. The findings were as follows: (1) The level of ICBA, O_2^- and SG was lower in the bone-fracture patients than in the normal ($P<0.05$) on the 1st to 10th day after fracture and the level was the lowest on the 1st to 4th day after fracture. (2) The level of ICBA was significantly correlated to that of O_2^- and SG. (3) The patient's plasma markedly reduced the reserve of ICBA, O_2^- and SG in the normal PMNs while AHC_3C_5S could partially ameliorate the reduction of the reserve of ICBA by 53.30%, O_2^- by 70.71% and SG by 41.12%. These findings suggest that the fragments of C_3 and C_5 are the direct factors to decrease ICBA of PMNs. Persistent action of C_3 and C_5 fragments might result in the escaping of the bactericidal O_2^- and SG from the cells responsible for the phagocytosis of pathogens. Our findings may be useful in the prevention and treatment of the complicating systemic infections in patients with bone fracture.

Key words complement; superoxide ion; specific granule; intracellular bactericidal activity; fracture

实验性肝动脉 Cobra 导管插管简介

Catheterization of hepatic artery in dogs

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随着肝癌介入性诊断及治疗的广泛开展,因肝动脉插管操作不当而导致诊治受挫亦不少见,进一步提高插管技术,选择适当的导管等亦受到了普遍的关注。利用犬肝动脉插管注入造影剂及其他药物进行有关生理生化及病理学研究也逐渐增多[1,2],本文总结15只正常犬肝动脉插管技术,以利于更好地开展肝脏病变的介入性诊治。

1 材料与方法

杂种犬15只,体重9.5~17 kg,术前禁食8 h,用戊巴比妥钠20 mg/kg静脉麻醉后,选用5F Cobra导管,经股动脉切开或穿刺插入至腹主动脉腹腔动脉开口前方,行非选择性腹主动脉腹腔动脉造影,再超选择性插管至肝总或肝固有动脉,手推造影剂行数字减影动脉造影术(DSA)或摄缩影片,再进行其他药物注射等实验操作,最后拔出导管,伤口加压包扎,用青霉素320万u/d,共3 d,以预防感染。

2 结果与讨论

本组动物均成功地经股动脉插管,超选择性插管至肝总动脉,13只犬观察到实验预定时间,1只犬插管时损伤腹腔动脉干,胰腺周围血肿,另1只犬拔管后股动脉加压包扎止血不成功,右侧髂窝血肿,这两只犬均于手术当天死亡。

腹股沟韧带下方股三角内股动脉较浅表,是常用插管部位。本组15只犬,13只体重10 kg以上的犬均采用Seldinger技术穿刺插管成功,2只体重10 kg以下的犬穿刺不成功而行股动脉切开插管成功。穿刺插管操作简便,拔管后可压迫止血,穿刺侧后肢功能不受影响。切开插管操作较繁,拔管后往往需结扎该动脉,切开侧后肢跛行,站立不稳。所以利用犬行动脉插管实验时,应选用体重较重者(10 kg以上),尤其需反复多次插管,观察时间较长者。

腹腔动脉是犬腹主动脉腹部第一大分支[3],其起始部位在第13胸椎(犬最后一胸椎)水平,本组15只犬腹腔动脉开口最前者为胸13椎体前1/3,最后者为胸13腰1椎间隙,开口位于胸13椎体前1/3者6只,中1/3者3只,后1/3者6只。腹腔动脉干起始后稍向下走行即分为三支:肝总动脉、脾动脉和胃左动脉,肝总动脉向前稍偏右走行,分出胃十二指肠动脉后,肝固有动脉向右下至肝门分为肝左右动脉,肝左动脉往往较右支粗大。

本组肝动脉超选择性插管均采用Cobra导管,由于其尖端双弯塑形,很容易插至腹腔动脉,而肝总动脉是由后向前走行,导管稍加扭力,即可超选择性插管至肝总动脉,甚或进入肝固有动脉及左右分支。超选择性插管过程中应注意,由于犬动脉管壁较薄,导管施加扭力时不能太大,否则易损伤血管壁,导致腹膜后血肿,甚至大出血。RH导管需送至主动脉弓打袢,且超选择性插管较困难,用于犬肝动脉插管不及Cobra导管。

拔管后股动脉有效的止血,对保证实验成功也非常重要。

关键词 肝;动脉插管;犬

中图法分类号 R657.3;R735.7

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