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Establishment of a human lung adenocarcinoma cell line A549 with multidrug resistance

Hu Yide, Qian Guisheng (Department of Respiratory Disease, Xinqiao Hospital, Third Military Medical College, Chongqing, 630037)

Abstract A multidrug resistant variant ($A549/R_2$) of human lung adenocarcinoma cell line A549 was established through culturing the cells gradually increasing dosages of adriamycin (ADM) up to a final dosage of 0.2 μg/ml in a period of 6 months. It was found that the cells, after culture, were 7～118 times more resistant of ADM than the parent cells (A549/P) at IC_{50}. Besides, $A549/R_2$ was resistant to epirubicin, vincristine, and etoposide, and relatively resistant to mustin, mitomycin C and carboplatin, but not resistant to 5-fluorouracil, methotrexate or bleomycin-A_5. When $A549/R_2$ was further cultured without ADM, there wrould be a 30% reduction of drug resistance in 4 weeks and a progressive reduction would occur when the culture proceeded on for 8 weeks though its IC_{50} (0.0693 μg/ml) was 20-fold higher than that of A549/P. These findings indicate that $A549/R_2$ expresses the phenotype of multidrug resistance with relative stability and can serve as an ideal model for the study of multidrug resistance in human lung adenocarcinoma.

Key words lung neoplasms; adenocarcinoma; drug resistance; doxorubicin

腹会阴直肠癌根治性切除术骶前静脉大出血的防治体会(附5例报告)

蔡志民 马宏敏 (第三军医大学西南医院普外科) 630038

骶前出血是直肠切除术中严重医源性损伤。国内文献报道平均发生率为2.9%,平均病死率为13%[1]。我院自1975年～1990年间,直肠癌手术中发生骶前大出血5例,现报道如下。

1 临床资料

本组5例。男性3例,女性2例。年龄最大的63岁,最小的34岁。平均为51.6岁。直肠下段癌3例,中、上段癌各1例。术中骶前出血4例,骶尾部同时出血1例。出血量最多2 000 ml,最少1 200 ml。出血原因:解剖变异1例,肿瘤与骶前筋膜粘连2例。手术中粗暴致伤1例。原因不明1例。止血方法:用妇科沙条填塞止血2例。电凝加缝扎止血1例。明胶海绵压迫图钉压迫1例。凡士林纱布填塞压迫止血1例。拔引流条时间3～6 d。住院时间6～42 d。4例痊愈出院,1例术后第6天死于感染。

2 讨论

骶前静脉破裂大出血多发生在直肠癌根治术时。究其原因主要有解剖变异,手术时解剖关系不清;分离直肠时未在骶前筋膜与直肠固有筋膜之间进行,太靠近骶骨膜分离;手术操作粗暴,破坏了正常间隙。本组5例中,由于手术粗暴所致一例,解剖关系不清一例,肿瘤与骶前筋膜粘连强行分离所造成2例。本组3例属直肠下段癌,中段与上段癌各1例。我们认为在做直肠下段癌根治性切除时尤应警惕骶前出血的发生。止血方法:目前国内对骶前出血采取了多种止血方法。如止血钉、电凝、骨泥填压等。但据文献报道仍以纱布条填塞止血效果较好。我院5例中4例采用填塞止血而凑效。预防措施:我们的经验,在施行腹会阴直肠癌根治性切除术游离直肠时应解剖清楚,分离在直视下用锐器施行。直肠固有筋膜与骶前筋膜之间之粘连带、索,应在直视下切断结扎。不做强行分离,以免撕破骶前静脉。如遇出血,不要用止血钳夹夹血管止血,以免撕脱,造成难以控制的大出血。有作者提出,对骶前静脉枝出血,采用缝扎及盆底填塞等方法可获止血。粗口径骶前静脉出血可采用止血钉对破裂出血处静脉嵌钉入骨质止血[2]。我院5例中有一例采用图钉嵌入骨质压迫止血获得成功。

关键词 直肠肿瘤/外科手术;骶前出血

中图法分类号 R735.37

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