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Induction of apoptosis by adriamycin in multi-drug resistant human bladder cancer cell lines

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Abstract Objective: To study the induction of apoptosis and explore the mechanism of multi-drug resistance of human bladder cancer. Methods: MTT assay, optical microscopy, electron microscopy, DNA agarose gel electrophoresis and *in situ* DNA nick end labeling were used to detect the apoptosis in BIU-87/ADM and BIU-87 cells. Results: Cell survival rate was significantly higher in BIU-87/ADM cells than in BIU-87 cells. Classical apoptotic morphological changes were found in both cell lines and DNA fragmentation was shown by agarose gel electrophoresis. Apoptotic index detected by *in situ* DNA nick end labeling was higher in BIU-87 cells than in BIU-87/ADM cells. Conclusion: ① In both cell strains, apoptosis is induced by adriamycin in a dose- and time-dependent manner. ② Apoptosis is apparently inhibited in BIU-87/ADM cells as compared to BIU-87 cells. ③ Apoptosis may play an important role in the development of multi-drug resistant human bladder cancer.

Key words multi-resistance; apoptosis; *in situ* DNA nick end labeling

静脉留置针在肝硬化腹水引流中的应用

Retaining needle of the vein for drainage of ascites due to cirrhosis

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腹腔穿刺排液是一种古老的治疗腹水的方法[1]。以往腹腔穿刺均用金属针头接橡皮管进行引流,不易固定,术者操作麻烦,且需多次穿刺,增加患者痛苦及医源感染的机会。我科自1995年以来,对32例肝硬化顽固性腹水患者,采用静脉留置针头进行腹腔穿刺,取得较好效果,现将操作方法介绍如下。

1 一般资料

本组32例中,男性28例,女性4例,年龄25~70岁。均选用德国贝朗公司产一次性浅静脉留置针(内径1.2 mm/18 GOD,长45 mm)。

穿刺部位选择及方法:嘱患者排空尿液,取半卧位,背部垫橡皮巾。向患者讲解配合方法,嘱其均匀呼吸;穿刺点多选在左侧,脐与髂前上棘连线的内2/3与外上1/3交界处[2]。常规皮肤消毒,术者戴无菌手套,铺无菌巾,直接取留置针接空针。抽取麻药行局部麻醉达腹膜壁层,待进入腹腔,回抽注射器可抽出腹水后,左手固定套针,取掉空针,抽出针芯,留置套管柄接1次性引流袋,胶布固定好套针柄,进针处覆盖无菌纱布;调节引流速度,放液不易过快,1次性放液量不易过多,不超过3000 ml[3]。注意观察患者面色、血压、脉搏、呼吸变化。放液完毕后,消毒针柄及连接处,取掉引流袋,用肝素帽封口,无菌纱布包扎连口固定。可定时放腹水。本组32例患者,留置套管时间最长12 d,最短3 d。

2 讨论

对顽固性腹水,需多次引流的患者,用常规穿刺引流,会造成患者痛苦,增加医源性感染的机会。用此法留置套管时间长,引流通畅,便于腹腔用药,能迅速解除患者的腹胀不适,改善心功能,明显缩短住院时间,减少住院费。对继发性食道静脉曲张破裂出血的张力性腹水患者,做腹水引流后,可使门脉压力暂时降低,有助于预防再出血[1]。此法便于固定,对于能下床活动患者,不影响其自主活动,深受患者欢迎。操作中应严格无菌技术,每日消毒进针部位,更换敷料。打开肝素帽后应严格消毒,方接引流袋,肝素帽用75%酒精浸泡,引流结束后,肝素帽可继续使用。此法安全可靠,无一例并发症发生,值得推广。

关键词 静脉留置针;肝硬化;腹水
中图法分类号 R575.2; R473.5

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