General Anaesthesia and Cognitive Functioning

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全身麻醉与认知功能

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【摘要】 麻醉和外科手术一样, 有危险性。麻醉对短时记忆和长时记忆以及顺行性和逆行性记忆认知功能等的影响, 较少为人所知。在试用多种麻醉方法, 对麻醉后心理恢复的研究中发现, 用普鲁泊福(异丙酚)麻醉的病人, 41% 有心理功能障碍, 用氯羟去甲安定和咪达唑仑(苏眠安)麻醉的病人, 83% 有心理功能障碍。Dijkstra, Houx 和 Jolles 指出在全麻下作心脏大手术后, 老年人有较大的认知功能障碍危险。作者认为对老年有施行麻醉, 可产生短期的, 而不是长期的认知功能障碍。但病人自己报告的认知能力减退是否真正反映认知功能的变化, 还是一个有争议的问题。有人对普泊福麻醉对于顺行性遗忘和逆行性遗忘的作用进行了研究, 对内隐性遗忘和外显性遗忘都进行了测试, 结果说明对手术前呈现的事物有逆行性遗忘, 而对手术中呈现的事物有完全遗忘, 但是没有证据说明在有内隐记忆时, 不会出现外显记忆。全身麻醉可能影响记忆功能。对病人的信息必顺认真考虑, 因为手术前出现的信息可能保留, 而对手术中信息的记忆则可能丧失。

【关键词】 麻醉; 认知功能

Anaesthesia like surgery, carries a risk, less know, is the effect of anaesthesia on cognitive functioning, for example, on short-term memory and on anterograde and retrograde memory.

In an investigation of mental recovery following fast track cardiac anaesthesia, different anaesthetic techniques were explored.[1] Patients received (1) Propofol, or (2) pre-medication with lorazepam followed by midazolam for anaesthsia. Impairment of mental function was noted in 41% of patients in the propofol group and 83% in the lorazepam and midaolam group ($P = 0.001$) 18 hours after extubation.

Dijkstra et al[2] showed that older people in particular have a higher risk of cognitive dysfunction afer major non-cardiac sugery under general anaesthsia. Cognitive function was assessd using tests measuring memory and attention, sush as ability to shift between two sequences, ability to ward off distractions, simple cognitive speed and speed of general information processing. Cognitive performance of the patients was compared with that of healthy subjects not undergoing surgery who were also subjected to repeated measurements. The authors suggest that anaesthesia in older patients causes short-term but not long-term cognitive dysfunction. However, after 6 months, 14 of 48 patients (29%) reported having experienced a decline in cognitive abilities after discharge from hospital. Eight of the 14 (17%) were still experiencing these cognitive complaints and reported "not being the same since the operation". It is debatable wether or not cognitive complaints truly reflect actual changes in cognitive funetioning, irrespective of age-related changes,[3] and patients' awareness of such changes.

Anterograde amnesia is generally regarded as the inability to learn new information and defective recent memory.[4] Retrograde amnesia is the inability to remember event prior to the incident (eg head injury) and rarely exceeds beyond 30 minutes preceding the incident.[5] In a study of 20 children and adolescents aged 8 to 15 years,[6] the effects of propofol anaesthesia was examined on anterograde and retrograde memory, tested both implicitly and explicitly. Prior to anaesthesia, sets of pietures were presented together with word pairs (eg hiking - woods) via earphones after the subjects were anaesthetised. Upon regaining consciousness, the subjects were tested for explicit memory of both the picture sets and word pairs by free recall, cued recall, and yes/no recognition.

Implicit memory was also tested by free association to

category cues for the pictures and by word association for the word pairs. Post- operative testing revealed retrograde memory for material presented pre- operatively but total amnesia for material presented intra- operatively. However, there was no evidence of implicit memory for material not available explicitly. The authors caution: the finding of uninterrupted ability to retain and retrieve information presented prior to anaesthsia despite total anterograde amnesia has implpcations for pre- operative communication directed towards paediatric patients as well as for intra= operative communication among surgical staff.

It is likely that general anaesthsia does affect memory functioning, and communication to patients must be carefully considered since information presented pre- operatively may be retained but intra- operative information retention may be lost.

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