

the anesthetic agent. The bladder wall remains somewhat insensitive to its distending contents, and although the expulsive force of the detrusor may actually not be diminished, the normal strong reflex vesical contractions, which coincide with desire to void, do not appear until the volume of the bladder and the intravesical tension are so great as to invite further pressure anesthesia of the wall, and a continued sensory type of retention which initiates urinary infection. To wait until the bladder is distended to these levels is to court infection.

"If malaise, chills, fever, and leucocytosis follow catheterization after the bladder has been so distended, the blame need not be placed on the catheter. The surgeon must call himself to task for allowing the seeds of infection to become implanted in the bladder wall by permitting distention, pressure necrosis, retention, and reduced sensitivity to pursue their vicious cycle. Early catheterization of patients after administration of spinal anesthesia, and, perhaps, after inhalation anesthesia, is a necessary therapeutic adjunct. . . . It was found that the mean volume of solution and the corresponding mean intravesical pressure required to produce desire to void were extremely high (671 c.c. at 42 cm. water) compared with controls having received intravenous anesthesia. In no case were the intravesical volume and tension within normal limits. This is interpreted to mean that following the use of spinal anesthesia there remains a residual mural insensitivity, coexistent with a decrease in vesical tone." 80 references.

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END, F. L.: *An Unusual Complication Following Spinal Anaesthesia*. *Canad. M. A. J.* 53: 55 (July) 1945.

"A man, aged 45 years, [was] admitted to hospital on June 16, 1944.

His attending physician had diagnosed a fibrotic appendix and he was referred for appendectomy. . . . On June 17 a spinal anaesthesia was administered, with 150 mgm. of novocaine dissolved in 2 c.c. spinal fluid. No difficulty was experienced in entering the dural sac, the spinal fluid flowed clear and easily and a satisfactory anaesthesia was obtained. An appendectomy was performed; the patient was altogether thirty minutes in the operating room and left it in a very good condition. . . . The patient was returned to the ward at 10.30 a.m. At 1.40 p.m. he complained of headache and chilliness, and developed shortly afterwards a chill, the temperature rising to 104.2°. He had slight rigidity of the neck, and at 2.30 he vomited, sweated profusely, became drowsy and could not be roused. From then on he became increasingly violent, tried to get out of bed, fought the nurses who tried to restrain him, muttered, rolled and moved about in bed incessantly. He had frequent micturition. Medication by mouth was impossible. Under great difficulties evipal 0.2 gm. was given intravenously, which quieted him to some extent, but the effect lasted for less than two hours. Evipal was then repeated, and again at 3 a.m. It only reduced his violence somewhat and lasted an abnormally short time. At 5.30 a.m. the man was extremely violent, and under the greatest difficulties, with six assistants holding him down, a spinal tap was performed. The spinal fluid was under no increased pressure but was slightly cloudy, with a cell count of 60 cells per c.c. The pathologist reported 'numerous pus cells, no organism seen.' A culture made was negative. An intravenous injection of glucose and saline was started but had to be discontinued as the man was too restless and pulled the needle out, by his movements in bed. . . . We used al-

ternatively very large doses of paraldehyde and chloral hydrate per rectum, exceeding the usual maximal doses, but even these brought rest for only a very short period. . . . He continued to toss about and his general condition degenerated. He became progressively weaker, which in view of his continuous expenditure of energy and our inability to supply him sufficiently with the necessary fluids and calories was not surprising, and we expected his death on June 19, early in the morning. His movements became weaker, his pulse which was 90, was barely palpable. However at 5.30 that morning he suddenly regained consciousness, and said 'What is the matter with me, where am I?' From that moment on, he was completely rational, normal in his behaviour, regained full control of his senses, had no complaints except extreme tiredness, and took food and fluids by mouth. His temperature dropped to normal, he made an uneventful recovery and was discharged July 1. Incidentally he did not even develop a postoperative hernia, which is remarkable in view of the continuous violent muscular efforts he made immediately following the operation. In retrospective analysis I would designate this case as one of an aseptic meningoencephalitis due to spinal anaesthesia with novocaine. . . . I have seen this patient many times since, he feels perfectly well now, and has had no sequelae of any kind."

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ADAMS, R. C., AND DIXON, C. F.: *Anesthesia in Thyroid Surgery*. Surgery 16: 700-704 (Nov.) 1944.

"Surgeons performing thyroid operations may be divided roughly into two groups from the standpoint of their choice of anesthesia. Surgeons of one group prefer that their patient be asleep throughout the course of the

operation and hence favor inhalation or intravenous anesthesia. Those of the other group favor having the patient awake, at least intermittently, throughout the operation in order that his speaking voice may be checked at intervals for possible damage to the recurrent laryngeal nerve and to permit straining in order that all potential bleeding vessels may be ligated securely before the wound is closed. This group prefers local or regional anesthesia with only the intermittent use of a general anesthetic agent. . . . Despite the fact that a surgeon may prefer a certain type of anesthesia in uncomplicated cases, some conditions make certain types of anesthesia preferable to others. Such conditions might include very large glands; substernal goiters; those which are causing undue pressure on, or displacement of, the trachea; dyspnea, cardiac disease; and severe thyrotoxicosis. . . . The fact that many patients suffering from goiter have varying degrees of elevation of emotional tone necessitates individualized adjustment of the preliminary medication to effect adequate preanesthetic sedation. Since the site of the operation is in close proximity to the trachea and upper respiratory passages, respiratory obstruction is always a potential hazard. Because of the elevation of the metabolic rate, anoxemia is not only undesirable but even dangerous, since these patients have a high oxygen requirement. Respiratory obstruction, in addition to inhibition of oxygenation, complicates the surgical procedure by increasing bleeding in the operative field. . . . Patients who have a disease of the thyroid, particularly those who have severe hyperthyroidism, require adequate preliminary sedation in order to lower their emotional tone to somewhere near basal level. . . . Avertin with amylene hydrate has attained favor with many surgeons for the pro-