Analgesia for pelvic brachytherapy

Editor—The review by Smith and colleagues on analgesia for pelvic brachytherapy is both timely and important, as very little has been written on this subject in the anaesthetic literature. We wish to add a few points that may be of interest to practitioners in this area.

Caesium is not the only radioisotope used for intracavity brachytherapy for cervical and endometrial malignancies (the dose rate obtained from caesium is insufficient for higher dose treatment); cobalt may also be used. Typically, high dose rate brachytherapy using a cobalt selectron machine requires fractionation, with treatments taking place at weekly intervals. This necessitates between three and five successive anaesthetics in patients who are often elderly and have significant co-morbidity, particularly those being treated for endometrial carcinoma who have previously been deemed unfit for surgery.

These patients may undergo treatment in remote, stand-alone oncology units (such as ours), with no general medical backup on site, and no resident anaesthetic cover or high dependency facilities. In order to assess and optimize these patients, we established a multi-disciplinary preoperative assessment clinic some years ago. This has resulted in a significant decrease in cancellations and utilization of in-patient beds. The use of concurrent chemotherapy and external beam treatment sometimes results in patients approaching the nadir of serial blood counts around the time the first anaesthetic is required. It is of paramount importance to consider the implications of myelosuppression, and the possibility of neutropenic sepsis at the time of intracavity therapy.

We favour a propofol-based i.v. anaesthetic technique (or appropriate regional or local anaesthesia). We have not found pain to be a significant problem during, or after, high dose intracavity treatment. Severe pain is unusual and the possibility of progressive pelvic disease must always be considered in this situation. The treatment takes place in isolated rooms with radiation shields to minimize the exposure of staff to radiation, and the duration of treatment varies depending on the type of machine used. The purchase of an appropriate closed circuit television system for remote monitoring constitutes a significant capital cost. If general anaesthesia is used, it is important to achieve a steady state before treatment is commenced, as interruptions may necessitate recalculation of the radiation dose and unnecessary prolongation of treatment.

The authors have not mentioned brachytherapy for carcinoma of the prostate in their review. This modality is increasingly being used as treatment for locally confined disease. Subarachnoid block provides good conditions for radioactive seed implantation, which is a team effort involving input from the medical physics, oncology, radiology, nursing and anaesthetic departments.

There is currently great interest in the use of magnetic resonance imaging in the planning and administration of brachytherapy for gynaecological cancers. If computerized treatment planning takes place prior to treatment, the patient may have to be anaesthetized for some hours, even for high dose rate treatment. Typically, an epidural anaesthetic will be required, together with monitoring equipment suitable for use within a magnetic resonance scanner.

Editor—We thought the review article on pelvic radiotherapy was well pitched and informative for those who have little experience of the field. As these types of treatments are only performed at limited cancer centres in the UK, it is possible that many anaesthetists will not encounter such procedures in their training. One of us (JFH) had not done so before she was allocated the ‘selectron list’ as one of her fixed sessions, and initially was ignorant of the train of events for these patients once they had the metal applicators inserted under general anaesthetic. The patients move from theatre into the depths of the oncology department for their treatment, and postoperative follow-up is difficult due to the duration of the radiotherapy and the enforced isolation of the patient in a lead-lined room.

We would like to add spinal anaesthesia to the range of anaesthetic techniques listed in the review for low dose rate intracavity brachytherapy for gynaecological cancer (selectron treatment). When JFH started this list, spinal anaesthesia was reserved for patients with medical indications such as severe respiratory disease, but feedback from patients and ward staff has now led to it being our technique of choice.

Patients are premedicated with temazepam, acetaminophen and a cup of tea 2 h before the procedure. The spinal mixture used is 0.5% heavy bupivacaine 3.5 ml plus diamorphine 500 μg; this gives a satisfactory block to at least T10, which is required for the cervical dilatation and uterine instrumentation. We use 27-gauge Whitacre spinal needles to minimize the risk of postdural puncture headache in these ambulatory patients, and have had no known incidence of headache as yet. A diclofenac suppository (50–100 mg depending on the age and renal function of the patient) is inserted before the rectal marker tube, and cyclizine (25–50 mg depending on the age and frailty of the patient) and ondansetron 4 mg are given intravenously during the procedure. I.v. fluids are started before the spinal block is performed, and continued until at least the first few hours of the selectron treatment. We prescribe regular acetaminophen and diclofenac for the treatment period of up to 20 h, with supplementary oral codeine or morphine tablets for breakthrough pain. This technique has several advantages over general anaesthesia.

(i) The patient does not require supplementary analgesia for several hours and can easily tolerate the journey by trolley back to the oncology department with the selectron applicators in place.

(ii) The patient is ready to eat and drink as soon as her applicator positioning in theatre is over, and is given a drink in recovery.

(iii) The selectron treatment does not have to be delayed because of slow emergence from general anaesthesia and the requirement for prolonged observations.

(iv) The lower body motor block prevents the patient from accidentally dislodging the applicators.

(v) There are far fewer unscheduled breaks in the selectron regimen for administration of analgesia and antiemetics.

We agree with the authors that a combined spinal–epidural technique with continuous epidural infusion would seem to be ideal for this treatment. However, in our hospital the oncology department is remote from the operating theatres, and the selectron room (which is monitored by the nursing staff via a television camera) makes close observation difficult except during the 4-hourly scheduled breaks in treatment.

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Editor—I have discussed these letters with Dr Malcolm Smith, Consultant Anaesthetist. In response to Appadurai and Hanna’s letter, we would make the following points.

(i) Our paper\(^1\) is entitled ‘Analgesia for pelvis brachytherapy’ rather than ‘anaesthesia’. Pain can be a major problem when patients awake from anaesthesia and the major purpose of the paper was to comment on techniques used to reduce postoperative pain. We did comment about the use of high dose brachytherapy treatments in our review (page 271), but we gave more attention to low dose rate treatments because postoperative pain is a greater problem in this group of patients. Moreover, a survey in 1994 showed that 97% of UK departments were using low dose rate apparatus, but we would acknowledge that there is a trend toward the adoption of high dose rate apparatus.

(ii) Undoubtedly, a multi-disciplinary preoperative assessment clinic is extremely useful, especially in remote stand-alone oncology units.

(iii) With the increasing use of combined chemoradiotherapy to treat carcinoma of the cervix, bone marrow suppression is an important consideration that needs to be taken into account prior to anaesthesia. However, the risk of sepsis must be balanced against tumour repopulation during the time the bone marrow is recovering. Personal experience has shown that intrauterine insertions can be carried out safely with an overall white count of 1.5–2 mm\(^{-3}\), as long as there is no pre-existing vaginal or uterine infection and the patients receive prophylactic antibiotics.

(iv) Propofol maintenance of anaesthesia is indeed a popular intraoperative technique in many disciplines. If the technique is continued via a target controlled infusion into the postoperative radiotherapy treatment phase, we would recommend the continuous presence of a trained anaesthetist, which is time and labour intensive as discussed in our article.

(v) Brachytherapy for prostate cancer is an increasing trend in the UK, although currently this is practised in only a few centres. We acknowledge that we have not dealt with this technique in our review, which is largely based on our own clinical experience and practice. It is interesting to learn that subarachnoid block provides good analgesia for this technique.

In response to Fitz-Henry and Chan’s letter, although our article was primarily concerned with postoperative analgesia, we welcome their description of spinal anaesthesia for low dose rate selectron insertion, which is used in our institution in cases of obesity or respiratory disease. We very much agree with your efforts to avoid postoperative nausea and vomiting, dehydration, and promotion of multi-modal analgesia.

One of the authors (MDS) of our review\(^1\) has studied intrathecal, diamorphine for pain relief in major bowel surgery and like many other obstetric anaesthetists, utilizes the technique for Caesarean sections. This agent would be expected to have a significant analgesic effect for up to 12 h into radiotherapy treatment. However, we would stress that any elderly or medically unfit cases would require close respiratory monitoring for episodes of early respiratory depression occurring up to 6 h after spinal administration.

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