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US ambulatory surgery projections are inappropriate

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Abstract

Ambulatory surgery in the US, already more than 60% of elective surgery, is predicted to exceed 70% by the millennium. This will be achieved by the increasing use of minimally invasive surgery (MIS) and by including operations and patients currently considered unsuitable for ambulatory surgery. Safety, quality of care and acceptability to patients and their carers from these projections have generally seemed to take lower priority than cost cutting, driven by medical insurance companies and Health Maintenance Organisations. To satisfy even nominally the concept of same day surgery, much of this projected increase appears to depend on a variety of different recovery facilities, including prolonged care by relatives, home visiting by agency nurses, 23 h stays and free standing recovery units for up to 48 h. This may not be a cost effective or appropriate model for other countries with different systems of health care funding. There are signs that in the US, this push to ambulatory surgery beyond reasonable limits is being questioned. Ambulatory surgery has enormous benefits for patients and enables the provision of more cost effective health care but future developments must be carefully monitored to ensure that this remains true. A clearer definition of what is meant by 'ambulatory surgery' is needed, as well as a consensus on the reasons why we keep patients in hospital and on what constitutes acceptable and safe care. © 1997 Elsevier Science B.V.

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1. Introduction

The United States of America (US) has set the pace in ambulatory surgery for nearly 30 years, and performs more ambulatory surgery than any other country in the world. The rest of the world generally follows and finds itself doing tomorrow what the US does today. An estimated 66% of all elective surgery in the US is already ambulatory [1], and this is forecast to increase further. Is this an appropriate model for the rest of the world or have the Americans now begun to push the limits of ambulatory surgery too far?

In his latest text book, Paul White summarises the projections for the future of ambulatory surgery in the US [2]. By the millennium it is predicted that more than 70% of elective surgery will be ambulatory. This will be achieved by a move to more minimally invasive surgery, by carrying out operations which are currently considered unsuitable, and by including more elderly and high risk patients. Day surgery up to now has an extremely good record for safety [3] and patient acceptance. These projections raise questions about what limits should be placed on ambulatory day surgery, and just how far is too far to maintain patient safety and quality of care?

2. Minimally invasive surgery

Minimally invasive surgery (MIS), mainly via the laparoscope, has significantly improved recovery after many procedures previously associated with considerable morbidity and the need for hospital stay. The increasing use of MIS may therefore enable more ambulatory surgery. However, MIS is not free from postoperative morbidity, and it can be extremely difficult to get patients home quickly after more invasive laparoscopic procedures. Studies of laparoscopic cholecystec-

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tomy, for instance, report prolonged recovery time and increased rates of overnight admission, with the majority of patients requiring at least 23 h recovery [4–6].

Microdiscectomy, a minimally invasive approach instead of a more major operation for prolapsed intervertebral disc, was carried out on carefully selected patients on a day case basis in one centre [7]. It was reported to be acceptable to 85% of patients, despite 24% describing their ambulance journey home as very uncomfortable. A relative was needed to care for the patient at home for 5 days postoperatively, and 18% felt that this was too onerous. The general practitioner (GP) was called out by 20% in the first 5 days and 3% were readmitted.

This suggests that early discharge after some MIS simply passes costs and the burden of care to the family and community health services. A one night stay after more major MIS may be a more appropriate and realistic goal.

3. Shifting more major procedures to the ambulatory setting

A disturbing trend is the move to do on an ambulatory basis, procedures which are generally acknowledged to be major operations, and which have traditionally needed not just a one night stay, but several days. There have been reports of day case vaginal hysterectomy [8,9], some laparoscopically assisted, although this may increase rather than decrease complications. Patients were sent home 7–10 h after their surgery. They needed to be well motivated, with good home circumstances and a carer for 48–72 h. Their discharge analgesia was acetaminophen and oxycodone or fentanyl patches. They removed their own urinary catheters if these were used, and took their own temperatures. They were contacted by the attending physician on the evening of their surgery and the following 2 days, and visited by a home health agency nurse. In Summitt et al.'s [9] retrospective study of 133 ambulatory vaginal hysterectomies, the overnight unplanned admission rate was 9%, and 3.8% were readmitted.

Vaginal hysterectomy is a painful operation, and there is an incidence of serious postoperative complications. After an 8 h postoperative stay, these patients must have been sent home fairly late in the day with what seems minimal analgesia. An occasional phone call or visit by an agency nurse does not appear to guarantee quality of care, nor is it an option in many other countries, where community resources are more limited. Discussion of vaginal hysterectomy on an outpatient basis [9,10] appears to be centred on the surgical aspects and cost savings rather than patient safety and quality of postoperative care.

A more amazing suggestion by Palmer et al. is that radical retropubic prostatectomy should be an ambulatory procedure [11]. The estimated blood loss in this study was 1200 ± 527 ml, and 59% of the patients required blood transfusion. After surgery under epidural bupivacaine, one dose of epidural morphine was given for postoperative pain relief. Many surgeons and anaesthetists would be very uneasy about discharging such patients the same day. However, the length of stay in Palmer's study was 1.7 ± 0.6 days. A total of 37% were discharged home after a one night stay, and the rest stayed longer. It is difficult to see how this fulfils the criterion of same day surgery.

Other suggestions for more major ambulatory procedures have included mastectomy, thyroidectomy, and knee and shoulder reconstructions.

4. Older and less fit patients

The current trend is to include more elderly and less fit patients in selection criteria for suitability for day surgery. There is little, if any, evidence that age or stable systemic disease contributes to increased morbidity, but the combination of more invasive surgery with age and infirmity may do so in future.

5. What happens after discharge?

What do these patients look and feel like when they go home? In the early days of ambulatory surgery, it was generally reckoned that patients needed to be 'street fit' to be able to go home. This has been replaced by the term 'home readiness'—an insidious change of emphasis—where the patient is expected to go home and stay in bed, with more care provided by their family. Patient education is stressed, to make sure that the patient knows what to expect and, the cynic might suggest, does not bother the ambulatory facility for trivial matters like pain or bleeding.

6. Ambulatory or same day surgery?

The push for more ambulatory surgery is, of course, dollar driven. The Medical Insurance Companies' and Health Maintenance Organizations' reimbursement to health care facilities is based on procedures being scheduled as ambulatory and as if recovery is predicted to be uneventful. Overnight admission is charged as unplanned hospitalization [12]. This means that the definition of ambulatory surgery is often not what is generally understood by this term in other countries and may include the 23 h overnight stay, in order to satisfy, even nominally, the expectation that unplanned

admission rates will not exceed 1 or 2% after 'same day' surgery.

To the rest of the world, ambulatory surgery is day surgery and is defined as a patient who has surgery, and goes home to his or her own bed the same day. In the UK, if a patient spends the night in hospital, they cannot be recorded as a day case. Hospital stays in all Western countries have fallen over the last 2 decades. In the UK, for example, bed occupancy per bed per annum has increased 50% and the number of acute inpatient beds has fallen by 20% since 1985 [13]. To the rest of the world, the 23 h stay regarded in the US as ambulatory surgery is short stay surgery.

The 23 h stay appears to be an artificial concept of same day surgery designed to ensure short hospital stays for the benefit of insurance companies. However, the cost benefits of true 'day' surgery are due to the ability to reduce hospital beds and expensive out of hours nursing costs. If the patient stays overnight because more prolonged recovery is needed, more facilities are needed than the average day surgery unit provides, and overnight nursing care is still needed. Does the 23 h stay actually save any money compared to short stay surgery?

If the object of increasing ambulatory surgery is to cut costs, it is clearly not successful in the US, as health spending ($ per person at purchasing power parity) is 75% higher in the US compared to Canada, and double that of European countries [14].

7. Other post operative recovery facilities

The types of care that American patients receive after their ambulatory surgery have been summarised by Twersky [15]. Many patients go home to be looked after by a carer, but other options are a visiting nurse, often agency rather than hospital based, a hospital hotel for self caring patients who live alone, hospital integrated recovery facilities or free standing recovery units for up to 48 h. Patients may need to be transported to these recovery units by ambulance, accompanied by paramedics.

This may not be appropriate for the rest of the world. Agency home nurses would not be cheap or easily available in many other countries, and passing the care for those patients who still need considerable medical and nursing input to the community health services, i.e. GPs and practice nurses, would be unpopular in publicly funded health systems unless special financial arrangements were made to reimburse the costs. In the UK many family doctors in charge of their own budgets purchase surgery directly for their own patients. Day surgery may be a less attractive option if increasingly complex ambulatory surgery means that their already heavy out of hours work load is further increased [16] without remuneration.

Privately financed free standing recovery facilities would be unlikely to be cost effective in other countries. From reports from the US, this appears to lead to the creation of additional small boutique type recovery units. It is clear from the public press and medical literature that health is big business in the US, and makes large profits for those who run health facilities, encouraging a proliferation of these. The attempt in the UK to defray the costs of health care by the Private Finance Initiative (PFI) is now acknowledged to have failed [17], and to undermine rational planning of health care. Health care provision is expensive and returns on private investments need to reflect the high capital input and risk involved. Furthermore, planning assumptions by commercial organisations may not accurately reflect clinical need [18].

If all health care in a country is publicly funded, a plethora of different recovery facilities would result in increased capital costs, duplication, and perhaps poor occupancy rates. This would neither save money nor improve quality of care. Economies of scale should make comparable care in hospital cheaper, provided that charges reflect actual costs.

In less well developed countries with long distances to hospital, few community services and low levels of funding, either private or public, these models of post-operative care would be unrealistic.

8. Patient attitudes

Although, in general, patient attitudes in the US to ambulatory surgery are described as favourable, this may be influenced by the financial penalties incurred if the procedure is not scheduled as ambulatory. Different systems of health care may have different political priorities and accord different values to patient opinions compared to the US, depending on what resources are available and who pays the bill in the end.

All studies of more controversial ambulatory surgery stress careful patient selection and education, and the resulting increased medical attention may incur a gratitude response on the part of the patient that may not accurately reflect patient opinions if the procedure is extended to a wider population of patients and day surgery centres.

9. How far is too far?

There are signs that even in the US this push to ambulatory surgery beyond reasonable limits is now being questioned. At the Ambulatory Anesthesia Symposium in Sydney, Australia in 1996, many American anesthesiologists stated that they were unhappy with the direction they were going in, but that they were

powerless in the face of the insurance companies. Paul White [2] comments that: "In shifting more extensive procedures such as shoulder and knee reconstructions and vaginal hysterectomy ... to the ambulatory setting, careful cost benefit analyses should be performed to avoid going too far." In New York, legislation is being drafted to outlaw 'drive through' mastectomies, and force insurers to pay for at least 48 h of hospital care [19].

Quality of care is not an absolute term—it needs to be defined in the context of the physical and financial resources, geography and patient expectations of the community served. What is appropriate in the US may not be appropriate in differently funded health systems, or for developing countries with fewer resources.

Ambulatory surgery has enormous benefits for patients and enables the provision of more cost effective health care but these future developments must be carefully monitored to ensure that this remains true. A clearer definition of the term 'ambulatory surgery' is needed, as well as some consensus on the reasons why we keep patients in hospital, and on what constitutes acceptable and safe care.

References

[1] Orkin FK. Ambulatory anesthesia. Past, present and future. Anesthesiol Clin N Am 1996;14:595–608.
[2] White PF. Ambulatory anesthesia and surgery: past, present and future. In: White PF, editor. Ambulatory Anesthesia and Surgery. London: Saunders, 1997.
[3] Warner MA, Shields SE, Chute CG. Major morbidity and mortality within 1 month of ambulatory surgery and anesthesia. J Am Med Assoc 1993;270:1437–41.
[4] Arregui ME, Davis CJ, Arkush A, Nagan RF. In selected patients outpatient laparoscopic cholecystectomy is safe and significantly reduces hospitalization charges. Surg Laparosc Endosc 1991;1:240–5.
[5] Singleton RJ, Rudkin GE, Osborne GA, Watkins DS, Williams JAR. Laparoscopic cholecystectomy as a day surgery procedure. Anaesth Intens Care 1996;24:231–6.
[6] Tuckey JP, Morris GN, Peden CJ, Tate JJT. Feasibility of day case laparoscopic cholecystectomy in unselected patients. Anaesthesia 1996;51:965–8.
[7] Kelly A, Griffith H, Jamjoom A. Results of day case surgery for lumbar disc prolapse. Br J Neurosurg 1994;8:47–9.
[8] Powers TW, Goodno JA, Harris VD. The outpatient vaginal hysterectomy. Am J Obstet Gynecol 1993;168(6):1875–80.
[9] Summitt RL, Stovall TG, Lipscomb GH, Washburn SA, Ling FW. Outpatient hysterectomy: determinants of discharge and rehospitalization in 133 patients. Am J Obstet Gynecol 1994;171(6):1480–7.
[10] Pelosi MA, Pelosi MAI. Randomized comparison of laparoscopy-assisted vaginal hysterectomy with standard vaginal hysterectomy in an outpatient setting. Obstet Gynecol 1993;81(5):800–1.
[11] Palmer JS, Worwag EM, Conrad WG, Blitz BF, Chodak GW. Same day surgery for radical retropubic prostatectomy: is it an attainable goal?. Urology 1996;47:23–8.
[12] Wong HC, Epstein BS. International perspective: United States. In: White PF. editor. Ambulatory Anesthesia and Surgery. London: Saunders, 1997.
[13] NHS Hospital Activity Statistics. England 1985–1995/96. London: National Health Service Executive, 1996.
[14] Economic Indicators. London: The Economist, 1997.
[15] Twersky RS. Anaesthesia for ambulatory surgery: postanaesthesia care unit issues. Ambulat Surg 1995;3:55–60.
[16] Pedersen LL, Leese B. What will primary care led NHS mean for GP workload? The problem of the lack of an evidence base. Br Med J 1997;314:1337–41.
[17] Boyle S. The private finance initiative. Undermines rational planning of health services. Br Med J 1997;314:1214–5.
[18] Pollock AM, Dunnigan M, Gaffney D, MacFarlane A, Majeed FA. on behalf of the NHS Consultants' Association, Radical Statistics Health Group and the NHS Support Federation. What happens when the private sector plans hospital services for the NHS: three case studies under the private finance initiative. Br Med J 1997;314:1266–71.
[19] Josefson D. 'Drive by' mastectomies to be banned. Br Med J 1997;314:92.