Should smokers be refused surgery?

Matthew J Peters

BMJ 2007;334:20-
doi:10.1136/bmj.39059.503495.68

Updated information and services can be found at:
http://bmj.com/cgi/content/full/334/7583/20

These include:

References
This article cites 8 articles, 1 of which can be accessed free at:
http://bmj.com/cgi/content/full/334/7583/20#BIBL

Rapid responses
17 rapid responses have been posted to this article, which you can access for free at:
http://bmj.com/cgi/content/full/334/7583/20#responses
You can respond to this article at:
http://bmj.com/cgi/eletter-submit/334/7583/20

Email alerting service
Receive free email alerts when new articles cite this article - sign up in the box at the top right corner of the article

Topic collections
Articles on similar topics can be found in the following collections

Smoking (1096 articles)
Other Surgery (296 articles)
Other Ethics (1422 articles)

Notes

To order reprints of this article go to:
http://www.bmjjournals.com/cgi/reprintform

To subscribe to BMJ go to:
http://bmj.bmjjournals.com/subscriptions/subscribe.shtml
Failure to quit smoking before certain elective procedures confers such clinical detriment that to proceed to surgery is ill judged. When all other clinical features are identical, costs are increased and outcomes are worse in a smoker than in a current non-smoker. In healthcare systems with finite resources, preferring non-smokers over smokers for a limited number of procedures will deliver greater clinical benefit to individuals and the community. To fail to implement such a clinical practice in these select circumstances would be to sacrifice sensible clinical judgment for the sake of a non-discriminatory principle.

Smoking up to the time of any surgery increases cardiac and pulmonary complications, \(^1\) impairs tissue healing, \(^2\) and is associated with more infections \(^3\) \(^4\) \(^5\) \(^6\) \(^7\) and other complications at the surgical site. \(^4\) \(^7\) These adverse effects compromise the intended procedural outcomes and increase the costs of care. Therefore, as long as everything is done to help patients to stop smoking, it is both responsible and ethical to implement a policy that those unwilling or unable to stop should have low priority for, or be excluded from, certain elective surgical procedures.

Such a policy should be limited to procedures where the evidence of harm is strong. These include plastic and reconstructive surgery \(^4\) \(^5\) \(^7\) and some orthopaedic surgery. \(^6\) \(^8\) A study of experimental sacral incisions of 12-18 mm found that infection occurred in 12% of smokers and 2% of non-smokers. \(^3\) Infection rates in smokers who had quit for four weeks were similar to those in non-smokers. In a study of wound and other complications after hip or knee arthroplasty, no smoker who had quit developed a wound infection compared with 26% of ongoing smokers and 27% of those who had simply reduced tobacco use. Overall complications were reduced to 10% in those who had quit smoking compared with 44% in those who continued. \(^8\)

The higher rate of infection is only one symptom of poor tissue repair. Independent of wound infection, after elective repair of an anterior cruciate ligament, smokers have objectively poorer outcomes and are less likely to return to their preinjury level of sports participation. \(^8\)

**Indirect costs of treating smokers**

With arthroplasty, some of the wound infections were limited to erythema, but 13% of smokers required re-operation because of infection. \(^7\) Such infections have been shown to prolong total hospital stay, double readmission rates, and quadruple costs of orthopaedic surgery. \(^8\) This represents a 38% increase in the direct cost of care for each smoker having surgery. In the arthroplasty study the intervention group had an average length of hospital stay of 14 rather than 11 days. \(^8\)

Increased use of hospital beds and associated costs mean less opportunity to treat other patients. On the basis of these data, five non-smokers could be operated on for the cost and bed use of four smokers and the non-smokers’ surgical outcomes would be better. Well informed smokers, unwilling or unable to quit, might assume an increased risk for themselves, but the decision is not theirs alone when it can indirectly affect others. Then, the community must involve itself.

With surgery that is done for purely cosmetic purposes, the increase in the risk and consequences of wound infection or fat necrosis from smoking is unacceptable and surgery is illogical. \(^5\) In reconstructive surgery, whether breast reconstruction after mastectomy or as part of head and neck cancer surgery, smoking substantially increases the risk of wound infection, flap necrosis, and fat necrosis. \(^1\) If a patient wants breast reconstruction at the time of mastectomy, the development of wound infection or flap necrosis will delay adjuvant chemotherapy or radiotherapy. Therefore, unless reconstruction is required as part of essential surgery that cannot be delayed, it is good policy not to offer reconstruction until the patient has stopped smoking.

**Refined policy**

Clearly these data on outcomes have some limitations. \(^10\) Some studies compare smokers with never smokers in situations where smoking related comorbidity is an important factor, such as cardiac and pulmonary complications. I have deliberately avoided this area in my discussion. Another problem is that studies use variable preoperative intervention periods and have not always validated smoking status by, for example, measuring exhaled carbon monoxide or cotinine. A study comparing groups randomised to ongoing, un influenced smoking with an intervention group would now be unethical. The question is whether four, six, eight, or more weeks of cessation are required for optimal benefit offset against hazards and inconvenience of surgical delay.

Smoking causes disease that may require surgery, but smoking as a cause of disease is not the issue for debate. Individuals should be treated equitably regardless of the cause of their disease. It is also true that smoking is rarely the only risk factor for a poor outcome, and smoking should not be considered to the exclusion of all others. Smoking is, however, unique in that its associated risk can be reduced substantially within a short period.

Therefore, it is not so much the principle that should be debated here but the practical aspects of implementation and exceptions that might apply. Special care must be taken to ensure that the risks and benefits of smokers with mental illness are well considered. The risks of potentially curative treatment for head and neck surgery in a smoker may be fully acceptable compared with the consequences of not operating. In the same way, a smoker awaiting hip replacement who has pain walking 100 metres but lives in a supportive social context is not the same as another who, without surgery, may be forced into nursing home care. A properly implemented policy would require that non-smoking status be validated but, for the potential benefits, this is justified.

**Competing interests:** None declared.

**Matthew J Peters** associate professor, Department of Thoracic Medicine, Concord Repatriation General Hospital, Concord NSW 2139, Australia matthew.peters@cs.nsw.gov.au
Last year a primary care trust announced it would take smokers off waiting lists for surgery in an attempt to contain costs. Matthew Peters argues that denying operations is justified for specific conditions but Leonard Glantz believes it is unacceptable discrimination.