Background: Surgery is an important palliative method for patients with advanced malignant disease. In addition to concerns related to clinical decision making, various moral challenges are encountered in palliative surgery. Some of these relate to the patients and their illness, others to the surgeons, their attitudes, skills and knowledge base.

Method and results: Pertinent moral challenges are addressed and analysed with respect to prevailing perspectives in normative ethics. The vulnerability of patients with non-curable cancer calls for moral awareness. Demands regarding sensibility and precaution in this clinical setting represent substantial challenges with regard to the ‘duty to help’, benevolence, respect of autonomy and proper patient information. Moreover, variations in definition of palliative surgery as well as limited scientific evidence with respect to efficacy, effectiveness and efficiency pose methodological and moral problems. Therefore, a definition of palliative surgery that addresses these issues is provided.

Conclusion: Both surgical skill and much moral sensibility are required to improve palliative care in surgical oncology. This should be taken into account not only in clinical practice but also in education and research.

In an interesting work Laurence McCahill and co-workers asked a group of surgeons how often they encountered eight specific moral dilemmas. The surgeons ranged the commonness of moral dilemmas as shown in Table 1. This study also indicated that patient age, tumour biology, extent of disease and severity of symptoms influenced treatment decision making in patients with advanced malignant disease. Although this study has increased our knowledge with respect to the ranking of specific moral dilemmas among surgeons, challenges still remain.

This article addresses some of these challenges in order to increase our sensibility to moral aspects in palliative surgery. To discuss moral challenges within this setting requires a knowledge of what palliative surgery is. The moral challenges that follow from various definitions of palliative surgery will be discussed, and a definition that addresses these challenges will be provided. The second part of this paper focuses on various moral aspects of palliative surgery with respect to both patients and their carers. In the third part, moral aspects of research in palliative surgical oncology are addressed.
well documented. It has been defined in terms of preoperative concerns. Variation in definition of palliative surgery is efforts can barely be appreciated because of methodological value of achieved knowledge from many of these research studies has been difficult to find. Consequently, the hardly be meaningfully compared; the core evidence from these studies has been difficult to find. Consequently, the value of achieved knowledge from many of these research efforts can barely be appreciated because of methodological concerns. Variation in definition of palliative surgery is well documented. It has been defined in terms of preoperative intent, individual patient prognosis and postoperative status. Relief of pain and symptoms were regarded the two most important goals, whereas increased patient survival was the least important goal.

If palliative surgery is defined by postoperative status, for example ‘resection with microscopic or gross residual tumour left in situ at the end of the procedure’ or ‘resection for recurrent or persistent disease after primary treatment failure’, it is defined by its result. This can be convenient in situations where a particular procedure can be regarded as either curative or palliative before operation, because the treatment goal cannot be defined accurately in advance. However, this seems to be the exception rather than the rule in palliative surgery, and patient information and consultation with the family is challenging when surgery is defined by the result rather than by the intention. If the conception of palliative surgery complicates the information and communication with this group of vulnerable patients, this is of moral relevance because patients’ understanding of a procedure is essential to meet the general criteria of informed consent. That is, if palliative surgery is defined by its outcome (tumour cells still present after surgery) and not by its intention, it becomes difficult to inform patients properly about their options.

Many surgeons support a broad definition of palliative surgery, that is an operative or invasive procedure employed to alleviate symptoms and to improve quality of life, but with minimal anticipated impact on overall survival of the patient. Broad definitions enable a wide spectrum of procedures to be included in the concept of palliative surgery and assessment of outcome may be challenging. Unclear definitions are problematic when designing assessments. Moreover, open-ended definitions expose one to the challenge of futile treatment.

Some definitions include surgery that reduces patient survival, as long as the treatment intends to relieve or prevent symptoms or improve quality of life. However, if decreased survival as a result of operation should be accepted, questions of moral relevance are evident. By how much must quality of life increase to make decreased survival acceptable? Are corresponding risk assessments appropriate? The World Health Organization’s definition emphasizes that palliative care neither hastens nor postpones death, and that surgery has a place in palliative care, provided that the symptomatic benefits of treatment outweigh the disadvantages. Hence definitions that allow reduced life expectancies take a stance on a morally significant issue.

Definitions that allow either symptom relief or improved quality of life have to deal with situations in which quality of life can be improved, but symptoms cannot be relieved. Placebo surgery may be an example. Many surgeons would be reluctant to operate on people with body dysmorphic disorder even if they knew they could improve their quality of life. Additionally, many would argue that it is challenging to evaluate quality of life in patients who know that they are at the end of life.

Many definitions include symptom prevention. Palliative surgery is an operation that is ‘largely intended for symptom relief or avoidance of symptoms or conditions anticipated secondary to progressive local disease, and is unlikely to alter the ultimate progression of disease in this patient or significantly impact patient survival’. However, how certain does one have to be to know that the procedure actually prevents symptoms when operating on asymptomatic individuals? Moreover, to measure outcome in accordance with definitions based on symptom relief or symptom prevention can be tricky; assessment of clinical effects of successful palliation by symptom relief in asymptomatic patients is obviously problematic.

So it is not easy to define palliative surgery, attention must be paid to the methodological challenges of these definitions, including moral challenges. There are both epistemological and ethical challenges related to definitions of palliative surgery and to address these challenges the authors define palliative surgery as any invasive procedure in which the main intention is to mitigate physical symptoms in patients with non-curable disease without causing premature death.

### Table 1 Moral dilemmas according to frequency

<table>
<thead>
<tr>
<th>Rank</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Providing honest information without destroying hope</td>
</tr>
<tr>
<td>2</td>
<td>Preserving patient choice</td>
</tr>
<tr>
<td>3</td>
<td>Use of advance directives</td>
</tr>
<tr>
<td>4</td>
<td>Withholding or withdrawing life-sustaining treatment</td>
</tr>
<tr>
<td>5</td>
<td>Discontinuing life support</td>
</tr>
<tr>
<td>6</td>
<td>Patient and family with differing goals</td>
</tr>
<tr>
<td>7</td>
<td>Uncertainty about patients’ prognosis</td>
</tr>
<tr>
<td>8</td>
<td>Fear of causing death by giving pain medication</td>
</tr>
</tbody>
</table>

1, most often.
This definition needs some qualification. First, one cannot in advance know whether a procedure hastens death. From this perspective the qualifier of the definition could have been ‘as long as there is no reason to believe that it hastens death’. However, the phrase ‘as long as it does not hasten death’ highlights the imperative to obtain knowledge about these (life-prolonging or life-reducing) aspects. Furthermore, the definition does not imply that surgery with the major intention of symptom relief that reduces the length of life necessarily is immoral. It only says that it falls outside the definition, that it is morally controversial, and that special attention is required.

Second, the definition refers to physical symptoms and not to quality of life. This is not because quality of life measures are irrelevant. An operation done with the intention of improving psychological or social (but not physical or functional) quality of life measures is morally controversial. Surgery is a physical (invasive) procedure that is expected to enable relief of physical suffering. Although it is quite obvious that surgery (physically) may also influence mental processes, special attention is required.

Third, the definition excludes the important group of patients who are initially offered curative treatment, but for whom the aims of the procedure become palliative during the operation. The definition forces one to pay special attention to classify carefully and to gain more knowledge about such patients.

Fourth, although the definition excludes palliative prophylactic surgery to prevent possible future symptoms, this does not necessarily mean that an operation offered in this context cannot be morally justifiable. Again, it emphasizes the fact that preventive palliative surgery is morally controversial and deserves special attention. In addition, the definition excludes support, such as establishing vascular access, nutritional support and tissue sampling, if these procedures are not intended for mitigating physical symptoms.

The point here has been to highlight morally relevant challenges related to definitions of palliative surgery and to present a definition that addresses these challenges. This does not mean that non-curative surgical activity that does not fall under the definition is necessarily immoral, but it does mean that there are good reasons to pay special attention to the moral aspects of such surgery.

Consequently, the duty to take care of the weak and the suffering has a long tradition in medical culture. The duty to learn and to be competent is widely accepted and prevalent. All of these duties appear to be relevant in palliative surgery.

The duty to help has been severely challenged in medicine in reports on overtreatment and futile treatment. Surgeons have pointed out that their professional autonomy has been substantial, and that ‘surgical procedures … are considered standard therapy without ever having been subject to rigorous evaluation’. There is no Federal Drug Administration for the surgeon. Colectomy for epilepsy, laparotomy alone for tuberculous peritonitis or pelvic inflammatory disease, treatment with simple posterior gastroenterostomy for duodenal ulcer, ligation of the internal mammary arteries for the relief of angina pectoris, and gastric freezing for duodenal ulcer are all appalling examples from the past. Nevertheless, these procedures were all employed with an intention to help patients. These examples should increase one’s sensibility to surgical hubris and, hopefully, make one look for the ‘colectomy for epilepsy’ of today.

These examples also illustrate that the duty to help can be interpreted in too absolute a sense, without being balanced against other relevant factors. This is especially so in palliative surgery when caring for a vulnerable patient who is weak or in pain, and where the evidence of efficacy, effectiveness and efficiency is limited. Expectations of patients and their relatives that the surgeon should ‘do everything possible’ make the duty to help seem even more prominent. Palliative surgical oncology is an area in which the duty to help must be balanced against ethical principles, such as non-maleficence and beneficence.

Benevolence and vulnerability

The duty to act and help is closely linked to a vital virtue of medicine, that is benevolence. To face patients suffering with cancer calls for compassion. Non-obligatory help to the weak and vulnerable is an ideal with long traditions and appears particularly relevant with respect to these patients. However, even if compassion and benevolence can be related to moral sensibility and good intentions of the care giver, these are necessary but not sufficient conditions for good help. Benevolence also requires consciousness of whether the benevolent actions actually help the patient in need. The ideal of charity is not blind. Drastic interventions without sufficient evidence cannot be justified by their compassionate and benevolent intentions alone. Moreover, benevolence leaves other pitfalls as well; it may conceal paternalism and the use of power. The patient may

Moral implications of palliative surgery with respect to patients and health professionals

Duty to help

The duty to help is a basic moral impetus in medicine: an essential obligation for all health professionals.
become only a means and not also an end in himself or herself. It is important to be sensitive to the autonomy and the dignity of the patient.

The impetus to ‘do everything possible’

Patients and their relatives tend to think that everything possible should be done or that they or their families will have regrets if they do not. When something is done, there is still hope, many will think. If there is no activity, as observed or experienced by the patient or relatives, it may be perceived as ‘they have given up on me’ and ‘they treat me as if I am already dead’.

The desire to ‘do everything possible’ is challenging in many ways. It is challenging in that it can enhance a misconceived ‘duty to help’ (as discussed above), but also in relation to informing patients and relatives (see below). Another difficult question is whether the individual patient has the ability to evaluate critically what ‘doing everything possible’ is like in his or her situation. Thorough evaluation of the evidence base, risks and the possibility of overtreatment is not usually included in the patient’s consideration leading to a wish to ‘do everything possible’. Many patients have an unlimited and unrealistic belief in the current knowledge and opportunities of modern medicine. They tend to think that the possibilities are many and the risks are few and minor. Surgery in particular is regarded as the symbol of the achievements of modern medicine. Cancer is also a disease of special symbolic character; metaphors such as ‘the war against cancer’ are often used. Of note is that in war, when strong and violent measures are applied, the weakest and vulnerable are usually those who suffer the most.

In a time where the pendulum has turned from paternalism to patient autonomy many might argue that one should satisfy the wishes of the patient and his or her relatives. The challenge arises when the efficacy, effectiveness and efficiency are uncertain. In particular, palliative surgery in oncological patients should not be offered to meet emotional, existential and psychological needs so that they do not feel ‘given up’ or lose hope.

Patient autonomy and information

Patient autonomy has become a key moral principle in modern medicine, and informed consent is at its core. However, how autonomy and informed consent are applied in clinical practice is poorly documented. Although various approaches may be used in different situations, some principles of autonomy seem to be generally acknowledged. An autonomous action is intentional, voluntary, and performed with understanding of the situation and the scope and consequences of various options. This tends to be challenging in palliative surgery and some of the reasons are given in Table 2.

Table 2 Challenges to patient autonomy in palliative surgery for cancer

<table>
<thead>
<tr>
<th>Scientific evidence on outcome and risk is limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palliative alternatives to surgery are poorly appreciated by many patients and information may be biased</td>
</tr>
<tr>
<td>Patients may be under substantial pressure from family members</td>
</tr>
</tbody>
</table>

As noted above, providing patients with cancer with ‘true information’ without destroying their hope is one of the most common moral dilemmas and emotional challenges identified in palliative surgery. It is well known that many patients remember only little pieces of the information about risk that is offered before surgery. They also tend to have difficulties with realizing their situation, which may result in many misunderstandings. The differences between informing and persuading, between persuading and manipulating, and between manipulating and coercing are not always clear. This is particularly true when caring for vulnerable patients. Lack of alternatives forces patients to trust the words and decisions of the professionals caring for them. At the same time the vulnerable may become subject to the power of the professionals.

Obtaining informed consent is challenging in clinical practice. It is important to ask whether a severely ill patient is able to take care of his or her own interest, to act autonomously and to give voluntary informed consent. If the patient’s condition deteriorates, is the previous consent still valid? What changes in the patient’s condition and performance have to take place before a new consent should be obtained? What does one do if the patient does not appear to be receptive to relevant information and is unable to make relevant decisions? How competent are relatives in grief and despair to take care of the interest of the patient? Will they recommend the surgeon ‘to do everything possible’ owing to fear that they will regret it otherwise? These questions show the principal practical
challenges faced by healthcare personnel in general and by the surgeon in particular.

There are problems, in addition, with ‘the right not to know’. It is recognized that many patients with cancer do not want to know about their condition; they trust their doctors to make the best decision. A challenging question here is whether a person who does not want to have information about vital matters affecting his or her own life can act autonomously. Furthermore, there is a risk that ‘the right not to know’ may be used by the surgeon as an excuse for undocumented, explorative or futile surgery.

Moral aspects of research in palliative surgery in patients with cancer

Common to the issues discussed in the previous section are that they concern the patient or healthcare personnel. The following section addresses moral issues related to the scientific evidence for palliative surgery.

Lack of knowledge about effects and risks

In palliative surgery, the lack of well documented scientific evidence on effects and risks is problematic. The indications for procedures appear to vary not only between countries but also between hospitals in the same country. In particular, there is little known about prevention of symptoms in palliative surgery. This lack of knowledge about effect, risk and prevention is of moral relevance. Professor Alan G. Johnson of the University of Sheffield Surgical Unit in the UK expresses this in the following manner: ‘Many operations for cancer have not been properly evaluated by randomized controlled trials, and there are situations where the placebo effect is likely to be strong but the specific effect may even be harmful. One concerns the pressure on the surgeon to “do something” such as operating even if it is impossible to remove all the tumour. Sometimes palliation can be achieved, but in others, the “benefit” is the patient’s knowledge that much of the tumour has been removed, even at the expense of a depression of the immune system, which could lead to a more rapid spread.

For some conditions a tradition of undocumented treatments seems to exist; the procedures employed are regarded as valuable and obviously effective, even without documentation. It is argued that it is immoral and a loss for the patient not to perform such procedures. On the other hand, operations that are futile or detrimental with respect to effect and risk are immoral. Unfortunately there are examples of widely accepted and applied surgical procedures that have no effect, such as laminectomy without fixation in patients with spinal compression and palliative nephrectomy for radiating pain. Even ‘obvious procedures’ have turned out to have no effect (other than placebo). Moreover, surgeons have been reluctant to take into account solid patient-reported outcome studies, and have been unwilling or unable to examine and report patient outcomes for many routine procedures.

There is a clear imperative to provide scientific evidence. Owing to limited evidence of positive effects of the palliative treatment employed it is important to pay attention to the threat of overtreatment in particular. With respect to symptom prevention in palliative care, this can hardly be underestimated. Furthermore, the dominating duty to help and the impetus ‘to do everything possible’ calls for awareness when benefits of interventions are to be considered against risks (beneficence). The need or request to do something for patients suffering at the end of life may in some people’s eyes remove the demands for scientific documentation but, in truth, the lack of scientific evidence should encourage research. Surgeons should take the responsibility for registration and critical evaluation of the effects of surgical procedures that are regarded as ‘obviously useful’ and ‘a loss for the patient’ if they are not performed.

The challenge of uncertainty is relevant to preventive palliative surgery in particular. This is true not only because of the outcome but also because of the uncertainty about whether the symptoms would eventually have developed if the patient were not treated. (This phenomenon is frequently referred to as pseudodisease or lanthanic disease). To treat a symptom-free person with advanced malignant disease, who will need all available resources to face the (uncertain) challenges of the disease, requires special caution and good evidence.

These moral challenges stemming from lack of knowledge have become even more pressing as alternative methods of therapy emerge. Without proper evidence in favour of surgery, alternative methods with evidence will prevail. Furthermore, without evidence the border between surgery and alternative medicine may disappear. The authors believe that a clear-cut and consistent definition of palliative surgery is a sine qua non for establishing such evidence.

Research and ethics

Lack of knowledge on utility and risks with respect to palliative surgery represents a moral as well as an epistemological challenge. The paternalistic tradition within surgery owes much to lack of knowledge; surgeons have been used to making treatment decisions, as well choosing and developing methods, for the (fatherly) best...
for the patient, without any request for documentation of utility, costs or risk. Explanations for the lack of firm evidence are many (Table 3). But this is not the complete answer; many methodological challenges relate to research in palliative surgery (Table 4).

This all makes it particularly difficult to document the effect of palliative surgery and there is also the question of how to implement a documented procedure. Are results and effects the same when palliative treatment is offered in a small general hospital compared with a large-volume specialized clinic? Can standardization of the operative technique reduce variability in technical surgical performance?33 There is a set of moral conceptions connected to these challenges:

1. Some claim that to do research on procedures that ‘obviously are useful’ is immoral (because it would be harmful to those in the control group, who would not have ‘the best’ treatment available).
2. Many argue that placebo surgery is immoral58,59.
3. Some may think that invitation or inclusion of severely ill patients with advanced disease into clinical research protocols is immoral.

Table 3 Explanations for lack of evidence in palliative surgery

| High expectations that the healthcare, professionals will ‘do everything possible’ |
| Professionally founded duty to do something and to help |
| Paternalistic tradition |
| Professional identity based on the ability to decide and to act |
| Long tradition of many undocumented procedures |
| The ‘obvious usefulness’ of certain procedures, and a correspondingly high readiness to intervene |
| Lack of tradition of high-quality research within certain fields |
| Differences with respect to outcome measures (symptom relief, quality of life) |

Table 4 Methodological challenges in research in palliative surgery33

| Rapidly changing health condition of the research subjects |
| Correspondingly changing endpoints |
| Treatment bias |
| Selection bias |
| Randomization |
| Surgical learning curves |
| Equipoise |
| Grey zones with respect to acute treatment |
| Interoperator variability |
| Selection of endpoints |
| Evaluation of efficacy (evaluation of method under ideal conditions) |
| Evaluation of effectiveness (evaluation of method under ordinary conditions) |
| Evaluation of efficiency (evaluation of effectiveness related to costs) |

4. It may be difficult to obtain informed consent from severely ill patients.
5. Evaluation of effects of surgical interventions compared with ‘no treatment’ (best supportive care) is immoral.
6. Some argue that ethics hampers the improvement of knowledge in palliative surgery57.

So the limited knowledge base implies many moral challenges. In other words, there is a link between moral and epistemological challenges. To a certain extent one can explain the limited knowledge by the fact that required research is, at least by some, considered immoral. This can result in a self-augmenting effect and may be interpreted as a paradox: the lack of knowledge is immoral but to gain the necessary knowledge is immoral too. This is hardly a good explanation. To make sure that patients receive palliative surgery based on the best evidence is a methodological and moral challenge that surgeons and researchers must take seriously, in particular with respect to documentation of outcomes. There is a moral impetus to perform research, provide quality assurance, contribute to systematic reviews and health technology assessments, as well as to be informed by such sources.

Prioritization

The lack of knowledge also has implications for prioritization. Common principles of prioritization frequently refer to criteria such as gravity, utility and cost–benefit. Cancer treatment normally meets the criteria of gravity. For palliative surgery utility is poorly or not documented52 and so proper prioritization is difficult in many clinical situations. If one does not know the effects of a certain procedure, one also does not know the cost–benefit or efficiency. So with respect to common (theoretical) criteria of prioritization, palliative surgery would have low priority, yet it is a substantial part of surgery.

However, lack of proper documentation of efficacy and effectiveness is not unique to palliative surgery; it is a general problem in modern medicine. The costs related to palliative surgery are about 50 per cent of the surgical resources in cancer surgery52. With respect to the clinical prioritizing of surgical procedures, palliative operations do quite well. One important reason for this is the gravity of the patient’s condition.

However, one might argue that there should be a limit because curative treatment may be more important than palliation. If there is a choice between treating a severely ill patient who potentially can be cured and an equally ill patient who can only be palliated, priority should be given to the former assuming that benefit of palliative and curative surgery is similar. The prospect of a longer life
for the patient with the curable condition supports this argument. Still, it is by no means clear that the developed nations have reached this level of prioritization.

Sensibility, precaution, knowledge and education

Surgery represents a potentially valuable form of palliation for a particularly vulnerable group of patients. Of great importance is that the patients are not exposed to futile or detrimental treatment, that they are offered the best palliative surgery possible (optimal timing, appropriate procedures employed with a low frequency of complications), that their dignity, rights and autonomy as patients are met with respect and, especially, that they are offered honest and individually attuned information (on effectiveness, risk, uncertainty and lack of documentation). This requires sensibility and precautions. In situations in which the patient has a short expected life span and the risk related to operation is high, non-operative procedures should be considered. Furthermore, there is a moral imperative to enhance and improve the knowledge base of palliative surgery. This includes addressing the moral–methodological challenges of immoral research. Many of the moral challenges in palliative surgery are displayed in the conceptual debate about what palliative surgery is. So a clear-cut and consistent definition of palliative surgery is necessary, not only for methodological but also for moral reasons. Although such a definition does not solve the challenges, it may make one address them properly.

Palliative surgery offered to patients with advanced malignant disease demands more than individual surgical skills. It urges moral education and ethical reflection by all who provide treatment, as well as sensibility to the patient’s physical, emotional and existential condition. Palliative surgery is challenging with respect to physician–patient interaction. The authors believe that this should be considered in the education of young surgeons.

Acknowledgements

Some of the issues addressed in this article have been considered in the education of young surgeons. The review team included Karl-Erik Giercksky, The Norwegian Radium Hospital, Oslo (chairman); Jon Erik Gronbech, St Olav University Hospital, Trondheim; Tor Hammelbo, Sørlandet Sykehus, Kristiansand; Henry Hirschberg, Rikshospitalet University Hospital, Oslo; Trygve Lundar, Rikshospitalet University Hospital, Oslo; Odd Mjåland, Vestfold Hospital, Tonsberg; Lodve Stangeland, Haukeland University Hospital, Bergen; Jon Arne Søreide, Stavanger University Hospital, Stavanger; Clement Trovik, Haukeland University Hospital, Bergen; Anders Walloe, Ullevaal University Hospital, Oslo; Rolf Wahlqvist, Aker University Hospital, Oslo; and Nicolai Wessel, Aker University Hospital, Oslo. Project coordinators were Berit Morland, Krystyna Hviding and Lise Lund Håheim of the Norwegian Centre for Health Technology Assessment.

References

13. Dunn GP. Patient assessment in palliative care: how to see ‘the big picture’ and what to do when ‘there is no more we can do’. J Am Coll Surg 2001; 193: 565–573.
35 Spodick DH. Numerators without denominators. There is no FDA for the surgeon. *JAMA* 1975; 232: 35–36.
43 Escalante CP, Martin CG, Elting LS, Rubenstein EB. Medical futility and appropriate medical care in patients whose death is thought to be imminent. *Support Care Cancer* 1997; 5: 274–280.