# 1 Surgery and Palliative Care: Is There Common Ground or Simply a Clash of Cultures?

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The goal of clinical medicine is to improve or maintain the best possible health and well-being. An intervention is "palliative" when the primary aim is to optimise function or comfort without an expectation that the course of the illness will be changed. The philosophy of surgery is predicated on a localised, biomechanical intervention at a single point in time, often with an optimism focusing on what could be achieved. Conditions with potential surgical interventions that develop in advanced disease have widely varying manifestations and progression, making studies difficult, leading to greater reliance on clinical intuition for decision-making.

The person's premorbid level of function, and the likelihood that any intervention will help them to return to, or maintain, better function, becomes the measures for decisions when considering palliative interventions. Principles include:

- D*o no harm* as surgery is trauma and, in someone with progressive, irreversible cachexia, anything that accelerates his/her deterioration is likely to compound disease progression even when minimally invasive.
- Just because something *could* be done does not mean that it *should* be done.

## 1.1 Introduction

The goals of surgery and good palliative care are directly compatible, where shared clinical decision-making with a less-than-ideal evidence base requires close consultation between the

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disciplines. These decisions must be made with less certainty about outcomes and with greater regard for potential burdens because the risk/benefit ratio shifts rapidly at the end of life, and understanding this trajectory, above all else, is imperative to tailor such surgical care.

The goal of clinical medicine is to improve or maintain the best health and well-being possible. Many of the most striking advances in improving health outcomes in the last century have been driven by the ability of clinicians to safely deliver surgical interventions.

More recently, the advances in health outcomes have reflected decreasing mortality from many acute diseases, leaving instead an increasing and paradoxical legacy of chronic, complex diseases. Many of these diseases become progressive, leading eventually or contributing to death. The sum of these two changes across the second half of the twentieth century has fundamentally changed how we live and, subsequently, how we die. At the beginning of the twenty-first century, most people in our communities will have foreknowledge of their death as they are most likely to experience a chronic progressive disease. This growing cohort of patients (many of whom owe their survival to the success of acute medicine and surgery) challenge our institutions and models of care on many levels and to a large extent constitute the specialty of palliative care.

## 1.2 How Do Surgery and Palliative Care Fit Together?

Palliative care seeks to optimise comfort and function for people with advanced, progressive illness. Physical, social, existential, psychological and sexual dimensions of personhood are addressed. The goal of an intervention is "palliative" anytime that the primary aim of a clinician is to optimise function or comfort without the expectation that the course of the illness will be changed. The population under consideration are characterised by "frailty", irrespective of age. Much of the acute care that is offered has a palliative intent, with one recent census of hospital inpatients estimating that palliation was the goal of care for one third of all inpatients [1].

The philosophy of surgery on the other hand is predicated on a localised, biomechanical intervention: a blockage is stented or bypassed; a perforation is repaired; bleeding is stemmed; a cancer is excised. The whole patient and their context are considered and respected, but the therapy is localised in time and place – emphatic, targeted and often bold. For a surgeon, the well-being of the whole patient is improved by solving a discrete problem. The ability to perform a procedure and provide the immediate post-operative care safely has continued to improve rapidly. Surgery's advances have been enabled by quantitative methods of research and practice. Quantitative methods are at their finest in situations with some regularity and reproducibility: normal anatomy and tissue biomechanics, expectations of inflammation, healing and repair and a predictable natural history of well-understood and relatively common diseases. Conditions that develop subsequently are not so straightforward, and it becomes more difficult to predict outcomes once systemic disease is established with its widely varying manifestations and progression – once it is "off the rails".

Quantitative methods are less suited to the complexities of many of the palliative care problems that have a potential surgical intervention associated with them. Many competent researchers have looked at the problems of palliative care patients that might be amenable to surgery for consistency and patterns (signals within the noise) and have not found them. A Cochrane Review summarises them. So strong and embedded is the quantitative approach, however, that failures of the technique are seen to be failures of the researchers who have been bold enough to tackle these challenges – failures rather than an acknowledgment that many of these individual clinical problems reside in a realm of clinical experience beyond the quantitative, even when relatively large numbers of patients and their outcomes are aggregated, demanding instead a realm of "rule of thumb", based firmly on the basic principles of surgery and "surgical wisdom" (whatever that encompasses).

With a recurrence of cancer, for example, the anatomy is altered, the biomechanics of the tissue are different and the nutritional state is often already compromised. Such problems are multiplied if there are a number of sites of recurrence in the one person. Response to surgery is unpredictable, the risks are higher and the payoff can seem relatively poor. The systematic approaches on which we rely to build our practices may not provide the specific answers seen in other areas of surgery. This leads to a much greater reliance on narrative and intuition.

In parallel with the rapid advances in surgery and the clinical supports required before and after the operating suite that have developed in the last 50 years, palliative care developed as a counterculture to mainstream health services in reaction to:

- The perceived failure of the health system to acknowledge that people die
- That most deaths are *not* a failure of the clinicians involved in care nor the health systems that delivers care
- That people have specific conversations, goals and tasks that are important for them and their surviving families when death becomes the inevitable outcome of a particular condition

At its inception, this counterculture arguably ignored key opportunities for active intervention that might have improved the well-being of patients – because patients had been labelled "palliative". However, there have been fundamental shifts in attitude from both within and outside the specialty. Palliative care specialists are now more likely to actively embrace interventions that will optimise function or comfort in people likely to tolerate a procedure. Over the same period palliative care has proved its value to the extent that the interventional specialities are now more willing collaborators.

One of the challenges of collaboration between surgeons and palliative care physicians is their profound differences in focus and experience. Surgery usually encounters patients early in a disease with a discrete, localised mechanical problem, a problem with a surgical solution that is well practised, trusted and reliable. Palliative care encounters patients in much more general [global] terms. A surgeon considers the mobility of a tumour, for example, or the state of nutrition. A palliative care specialist, in the setting of metastatic cancer, considers the (often long) plateau phase where a person's overall condition (reflected in their level of function) is relatively stable, noting that once function starts to decline, the trajectory to death is rapid. In this setting, the major prognostic feature is overall well-being rather than the organs in which metastases appear, reflecting that advanced cancer is a systemic disease causing systemic decline. Increasing global frailty is the hallmark of death approaching.

There are few randomised controlled trials of surgical care compared to other ways of dealing with symptomatic problems, and the few studies that do exist often stratify on the basis of performance status. Those with poor performance status tend to be systematically excluded. The absence of research says a great deal about the complexity of the problem and how difficult it is to tease out strands of consistent experience that can be applied generally to clinical decision-making.

Where guidelines fail – and they fail often in the palliative care setting – the challenge becomes clinically dealing with uncertainty. Once such uncertainty is recognised because of a lack of applicable evidence, then there are ways to navigate the circumstances based on values, first principles and clinical experience. While acknowledging that some of the principles, aphorisms and rules of thumb are contradictory, some are presented here; some are surgical and some are palliative. Clinical experience, narrative evidence and intuition may be all the guidance that is available. First, *do no harm* is a good start. Surgery is trauma, not a magic wand, and we should never underestimate just how much worse an operation can make things for someone with established cachexia and no way of reversing the underlying disease state.

If a person is in a catabolic state, anything that accelerates his/her deterioration is likely to be irreversible. The trauma of surgery compounds the deterioration of the disease itself. The systemic well-being of the person is a key index of ability to withstand the catabolic insult of

surgery, no matter how minimally invasive that surgical procedure may appear to be. People with established and progressive cachexia are unlikely to tolerate even the most straightforward procedure. Importantly, such cachexia is not limited to people with cancer but seen also in advanced AIDS, neurodegenerative diseases and end-stage organ failure. The ability to recover from surgery is going to be limited and arguably may hasten dying even if the surgery itself is deemed "a success". Minimally invasive techniques alter this balance between metabolic insult and benefit. Modern technologies (often minimally invasive) find niche applications in this area (stents, multiplex vascular access ports for isolated organ perfusion or transarterial embolisation, as examples).

The overall condition of the patient must be weighed against the proposed intervention in a multifactorial calculus that has little certainty. Systemically, what is the overall condition of the person? Where might this person be in their disease trajectory either with or without the intervention proposed? What has been the rate of (irreversible) systemic decline in the last week/month/quarter? Rapid decline without a reversible cause is likely to delineate a very short prognosis, while a slower decline is likely to indicate a longer prognosis. Ultimately, is this person otherwise going to tolerate this procedure and live long enough to recover from the effects of the procedure to enjoy the benefits offered?

Optimism underscores the surgical approach and where there is uncertainty there can be good surprises as well as sad ones; an obstruction can be benign but sadly even a benign obstruction in someone with widespread metastatic disease may be the harbinger of death, with or without surgery.

As an example, the surgical approach tailored to the person with advanced disease may include consciously seeking to:

- Make an incision to avoid tumour mass and come in close to adjacent loops of obstructed and collapsed bowel
- Use non-absorbable rather than a dissolving suture
- Bypass rather than attempting to resect a fistula

Should the patient be nursed on the surgical ward with its rigour and focus or stay where it might be quieter and enjoy his/her existing relationships with staff?

Within any health-care system, there will be additional layers of often confounding complexity to interpret and resolve: an operating room and staff must be available; does the surgeon have the emotional reserve or the time and energy to take the case on? To suggest that these factors may influence clinical decision-making is offensive to some clinicians; however, evidence suggests that logistics and even financial considerations do have a bearing on the care that is offered.

## Conclusion

Ultimately, the goals of surgery and those of good palliative care are directly compatible. They belong in the realm of shared clinical decision-making where an evidence base may not be directly available and where the consequences of decision-making are profound. The decisions must be made with less certainty as to the outcome and with greater regard for potential burdens than one is used to as a surgeon.

Where there are no quantitative data to help the calculus of risk and benefit, uncertainty cannot be solved in prospect. Patterns may be discernible in retrospect, and as experience, however fragmented and heterogenous, accrues, such experience is audited with the expectation that at some point signals may emerge from the noise. Any data collection will be confounded by the development of new techniques as surgical and engineering imaginations innovate. It is complicated, it is changing and it is fuelled by an optimism of diversity, imagination and resilience. The advances of surgery in generating less morbidity and more predictable benefit that have been developed, especially in the last two decades, have opened opportunities for palliative interventions which, in carefully selected cases, offer demonstrable benefit. This "shifting ground" is to be welcomed in the palliative setting, tempered by profound and humble respect for the person who is dying and their family.

Just because something *can* be done does not mean that it *should* be done. As someone deteriorates systemically, the risk/benefit ratio starts to shift rapidly, and understanding this trajectory, above all else, is imperative to tailor surgical care to the individual as death approaches.

## Reference

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