British Society for Dermatological Surgery,

Medical Student Essay Prize

How do we optimise patient's experience of dermatological surgical procedures?

Word count: 800

(Excluding, tables, figures, and references)

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July 2020

Introduction

One of the key dimensions of the quality framework in the National Health Service (NHS) commissioning boards is patient experience.[1] However, barriers to providing optimal care in Dermatological Surgery (DS) arise throughout the perioperative period. This essay draws evidence from dermatological literature focusing on skin cancer patients (accounting for most DS procedures) to provide practical recommendations on how to optimise patients' experience in the pre-, intra-, and post-operative setting.[2]

Understanding the patient's experience

Given the various patient- and physician-specific factors that influence this, studying it is far from easy (**Figure 1**). Ways of addressing this, include the use of Patient-reported outcome measures (PROMs), Patient-reported experience measures (PREMs) and Performance Measures (PMs). These are questionnaires used in the perioperative period designed to measure patients' views of their health status, their experience whilst receiving care, and the quality of care delivered by their physicians, respectively.[2] Data from validated tools could then be used to improve patient experience.

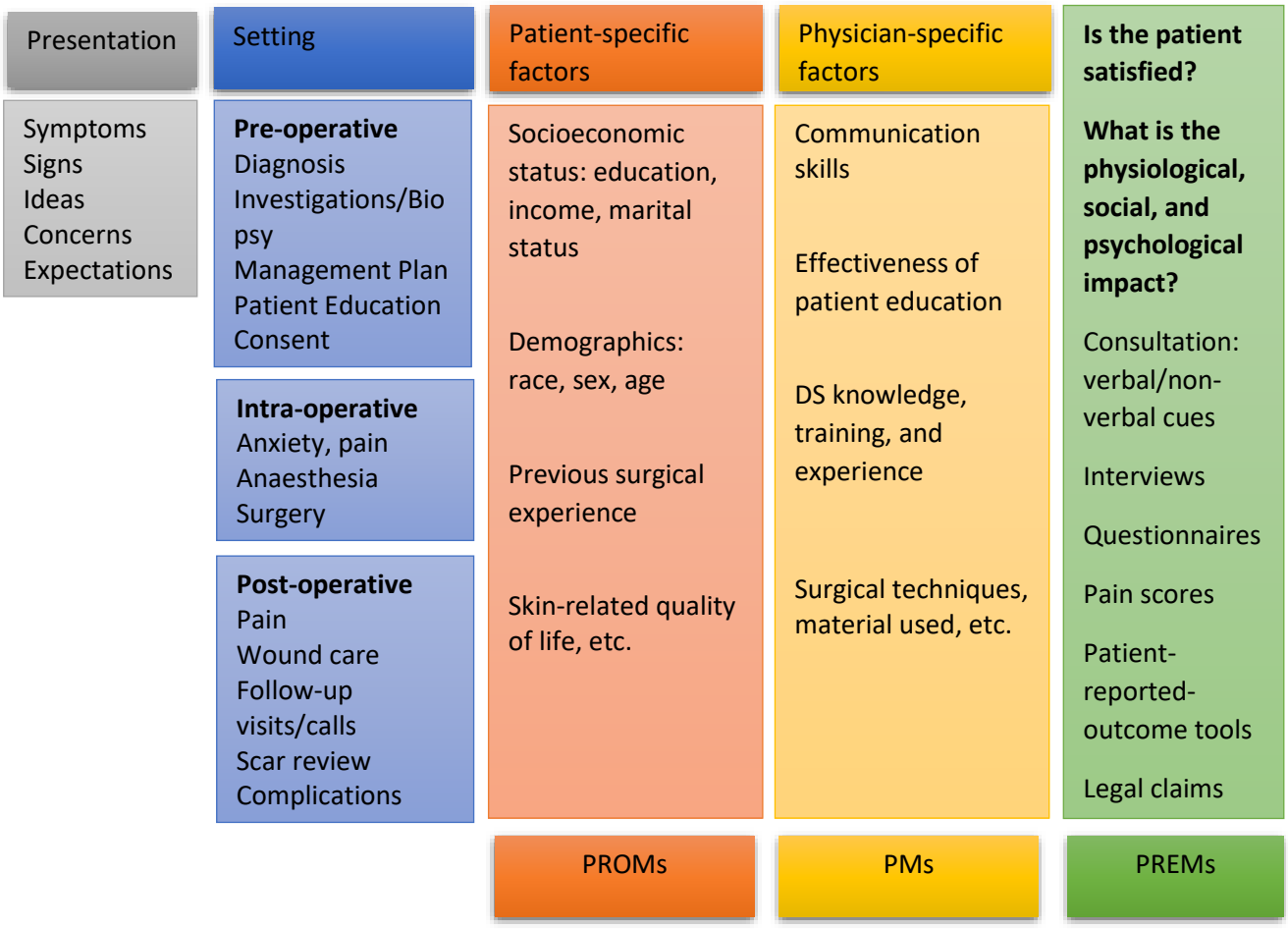

Figure 1: Simplified model of the patient experience of DS, the factors implicated, and how this can be assessed.

Pre-operative strategies

The preoperative period is crucial for accurate diagnosis, patient education, and effective communication.

<u>Improving the diagnostic pathway</u>

Managing skin cancer can be extremely stressful for the patient. Suggestions for improving this, include the use of teledermatology* to reduce waiting times and increase access to specialist opinion, as well as formal dermoscopy staff training and use of reflectance confocal microscopy to minimise the number of unnecessary biopsies and excisions needed, hence improving patient satisfaction **(Table 1).**[3,4,5]

* The delivery of dermatological care through information and communication technology

Recommendation	Evidence	Level of evidence	Grade
Use Teledermatology to reduce waiting times, limit unnecessary referrals and widen access to specialist opinion (e.g. patients in rural areas or during COVID-19)	Cochrane review concluded that teledermatology can be relied upon to correctly identify most malignant lesions, however further prospective evaluation is needed to support its ability to accurately triage lesions from primary to secondary care.[3]	1A	A
Formal dermoscopy training for dermatology practitioners to reduce unnecessary biopsies	Formal dermoscopy training has been estimated to reduce the annual biopsy number in the average dermatology department by 166, leading to reduced pressure on the service and improved patient experience.[4]	4	C
Use Reflectance Confocal Microscopy (RCM) to obtain non-invasive "optical biopsies" and reduce unnecessary biopsies and excisions.	Cochrane review concluded that RCM is an accurate test for identifying melanoma, and it may reduce the number of people receiving unnecessary surgery by up to three-quarters compared to dermoscopy. This may also apply to BCC but more research is needed to confirm it.[5]	1A	A

Table 1: Ways to improve the diagnostic pathway and increase patient satisfaction.

Patient education

Patient education in the preoperative setting may improve post-surgical outcomes.[6-8] Customised education strategies may be needed owing to the wide spectrum of educational levels and health literacy among patients. Asking patients their preferred language and educational method, assessing basic understanding, and utilising the "teach me back" method enhances patient-centred education.[9] Additionally, group consultations allow patients to benefit from added questions and dialogue with peers, resulting in higher satisfaction.[10] Moreover, supplementing verbal instructions with handouts, visual aids, internet resources

and video teaching, has been shown to improve patient satisfaction and comprehension.[11] On the other hand, educational telephone calls are not recommended.[12]

Effective communication

A study demonstrated that the most important factor related to a positive patient experience in DS was the physician's ability to communicate.[13] This is essential in identifying what patients value most and guide shared-decision making.[15] Moreover, aligning patients' expectations with realistic outcomes is crucial in enhancing patient satisfaction. Finally, identifying patients at increased risk of post-surgical pain and anxiety may help alter surgical decisions, and guide discussion about potential actions to reduce this **(Table 2)**.[17-18]

Recommendation	Evidence	Level of evidence	Grade
Practise patient-focused communication	Review provides evidence-based suggestions: sit down at patient's eye level, allow patients to write down their expectations of the visit, elicit the full spectrum of concerns, use reflective listening, and show empathy by acknowledging patient emotions[14]	1A	A
Identify what patients value most and allow patients to take active role in the decision-making process	This has been documented to result in improved experience[15]	1A	A
Use a surgery consent photo booklet containing images of simple elliptical excisions, surgical markings to give patients an idea of the margins necessary for removal of common lesions, healing outcomes, dressings used and common post-operative wound complications.	The use of this booklet improved patients' understanding, peri-operative expectations and experience of skin surgery[16]	3B	B

<table>
<tr><td>Recognise elevated levels of anxiety about post-surgical appearance and decreased quality of life in the preoperative period to tailor counselling and improve patient experience</td><td>Patients who underwent MMS that were younger than 65 years, were female or smoked were at increased risk for impaired quality of life after surgery and appearance concerns. The majority identified the surgeon as the appropriate person to address these concerns. [18]</td><td>4</td><td>B</td></tr>
<tr><td>Identify patients with risk factors for severe post-surgical pain and guide decisions</td><td>Review summarises risk factors as follows:[17]<table><tr><th>Higher risk likely</th><th>Uncertain risk</th></tr><tr><td>-History of hyperalgesia
-Hystory of pain catastrophising
-Multiple same-day procedures
-Patient age <31 years
-Regular opioid or anxiolytic use</td><td>-Anatomic site
-Anxiety disorder or depression
-Body mass index
-Sex
-Size of defect
-Type of closure: linear repair, flap or graft
-Tesion on wound edge</td></tr></table></td><td>Variable for each risk factor</td><td>Variable for each risk factor</td></tr>
</table>

Table 2: Ways to improve physician-patient communication in the pre-operative setting.

Intra-operative strategies

During DS patients are awake and aware of the surroundings, which may increase anxiety and pain. Moreover, patients often require excision of multiple sites, thus the risk of wrong-site surgery (WSS) and reduced patient satisfaction is increased.

<u>Managing anxiety and pain</u>

Reduction of pain and anxiety has been demonstrated to decrease analgesic requirements and complication risk, strengthen the physician-patient relationship, and increase overall

patient satisfaction.[19] Factors that contribute to anxiety are the risks associated with the procedure, fear of pain, fear of harm and disfigurement, separation from family and an unfamiliar environment.[19] Use of anxiolytics as well as non-pharmacological methods including personalised music therapy, virtual reality, hypnosis, guided imagery, and avoidance of graphic terminology may improve patient satisfaction (**Table 3**).[20-25]

Recommendation	Evidence	Level of evidence	Grade
Music supplementation (especially selected by patient) to reduce anxiety and pain	Patients undergoing MMS demonstrated significantly reduce anxiety levels through personalised music choice during surgery These findings were not duplicated when the selected music was not patient driven[20,21]	1C	B
Virtual reality to reduce anxiety	Salivary cortisol levels decreased when virtual reality was used in patients undergoing skin cancer surgery. Personalised, self-selected scenes or themes may offer added advantage[22]	2B	B
Hypnosis	RCT showed significant reduction in anxiety in the live-induction group compared to control[23]	IB	C
Guided imagery	RCT showed no significant differences in subject's pain, anxiety, blood pressure and pulse rate between guided imagery and control[24]	IB	C
Avoid graphic terminology by replacing it with hand signals or substitute terms	Expert opinion: substituting more graphic and stress-inducing terminology such as "skin hook" with "dermal elevator" has kept patients at ease and improved their perception of the procedure[25]	5	D

Table 3: Ways to reduce anxiety in the intra-operative setting.

Local anaesthesia is the most widely used method to manage intra-operative pain, however, it causes acute pain in and of itself. Strategies to reduce this are summarised below (**Table 4**)

Intervention	Evidence	Level of evidence	Grade
Mechanoanaesthesia e.g. pinching or vibration at injection site to reduce pain	RCT showed that repetitive pinching of the skin during lidocaine infiltration significantly reduced patient discomfort.[26] RCT showed significant reduction in pain with vibration during BTX-A injections[27] The use of a vibrating kinetic anaesthetic device during injections significantly reduced pain scores during injection, and patients preferred it over control[28]	IB IB 2B	B C B
Cold anaesthesia e.g. applying cold water/air at injection site to reduce pain	RCT showed that cold air pre-treatment reduced pain score of needle injection for cutaneous procedures in 33 out of 40 patients[29]	IB	B
Buffering lidocaine solution with sodium bicarbonate	A Cochrane meta-analysis has shown significantly better pain outcomes with buffered lidocaine compared to plain lidocaine infiltration for a variety of minimally invasive procedures[30]	1A	A
Warming solution	Systematic review suggests that warming the solution results in reduced pain on injection[31]	1B	B
Verbal distraction e.g. talking to patient to reduce pain during needle insertion	Expert opinion: verbal distraction s recommended to reduce pain of needle insertion in dermatologic surgery[32]	V	D
Needle insertion method e.g. using smaller needle or inserting at different angle	Reduction in pain scores of lidocaine injection with 33-gauge needle compared to 30-gauge needle[33] Lower pain score with needle insertion at 90 degrees vs 45 degrees[34]	IB IB	C C
Adjunctive long-acting bupivacaine to lidocaine can also	RCT concluded that adjunctive use of 0.5% bupivacaine is effective in prolonging	1B	A

decrease the need for repeated local anaesthetic injection and reduces intraoperative pain during long wait times	anaesthesia in MMS, potentially improving patient experience at a justifiable cost[35]		
Adjunctive perioperative gabapentin to reduce pain	The use of gabapentinoids significantly reduce postoperative pain and opioid consumption in the first 24 hours after major surgeries (NOT DS).[36]	1A	A

Table 4: Ways to reduce pain in the intra-operative setting.

Avoiding intra-operative errors

WSS accounts for 20% of NHS dermatology legal claims.[37] Greater adherence to the WHO surgical checklist, use of a mirror to reconfirm the site with the patient, having a final 'surgical pause' where the assistant calls out and reconfirms the site and procedure with the patient and surgeon, and mandatory staff training may prevent WSS.[37-38] Development of a dermatology-specific surgical checklist may also be beneficial.

Improving patient experience in-between same-day procedures

Studies suggests that reducing the perception of time spent in waiting areas (especially common in MMS) by keeping patients engaged through frequent updates, explanations of long delays and providing food, beverages and waiting room entertainment, improve patient satisfaction, whereas, actual waiting times do not.[39]

Post-operative strategies: pain, follow-up, and scar review

Post-operative pain is one of the main concerns of patients undergoing DS. Highest pain scores occur on the day of surgery and steadily decline until postoperative day 4.[47] Ibuprofen

or paracetamol may be used initially, and opioids as second line.[40-41] Preventative analgesia may also be beneficial. Moreover, same day telephone calls and follow-up visits within 4 weeks may increase patient satisfaction.[42-43] Perioperative use of validated patient-reported outcome tools can help to identify patients with scar concerns and offer appropriate support.[44] Also, strategies to accelerate cosmetic improvement may be tried (**Table 5**).[45-46]

Recommendation	Evidence	Level of evidence	Grade
Post-operative pain management			
Use ice or cold packs at site of surgery to decrease pain and postoperative narcotic use	The mean pain scores in the skin graft donor site were found to be significantly lower in patients in the group with ice application on days 1-3[48]	2B	B
For minor procedures, offer NSAIDs instead of paracetamol in the first 6 hours post-procedure	Metanalyses show that for minor procedures, NSAIDs at a dosing of ibuprofen 200 to 400 mg are superior to acetaminophen 600 to 1000 mg for acute pain control when given in the first 6 hours post-procedure (NOT DS)[40]	1A	A
Combine paracetamol and ibuprofen to reduce pain and opioid requirements	Post-operative pain intensity and analgesic supplementation were significantly reduced when ibuprofen and paracetamol were used in combination vs alone. [41]	1A	A
Follow-up calls and visits			
Same-day follow-up telephone call by healthcare staff	Same day, follow-up telephone calls after MMS were found to result in higher satisfaction scores in 94% of patients with some patients reporting that the satisfaction would be the same either with a doctor or a nurse-led telephone call[42]	2B	B
Follow-up visit within 4 weeks	Post-operative visits were considered important by 89% of patients undergoing DS, with 55% opting for a follow-up visit within 4 weeks, mainly to ensure that wounds were healing correctly[43]	3B	C
Scar review			
Early treatment with 585-nm pulse dye laser	Early treatment with 585-nm pulse dye laser showed a significant patient-reported scar improvement[45]	2B	B

Early intervention with fractional CO2 laser	Early intervention with fractional CO2 laser led to patient-reported scar improvement[46]	2B	B

Table 4: Ways to improve patient experience in the post-operative setting.

Conclusion

The responsibility of the physician, the healthcare system and research body in improving patients' experience is evident. Current suggestions will need to be evaluated on the financial investment and planning needed to implement them. In the future, dermatology-specific tools to assess patients' perspectives, and high-quality DS research on ways to improve patient experience will arguably pave the way to clinical excellence.

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