



BSDS Guidance on Antithrombotics and Skin Surgery, August 2016

Bleeding risk and skin surgery: Anticoagulants, antiplatelets, and other agents **British Society for Dermatological Surgery Guidance**

Contents

Page	Section
1	Introduction
2	Risk assessment
4	References
5	Operating tips
6	<u>Flowchart</u> : Management Summary
7	<u>Table</u> : Risk stratification of procedures

Introduction, executive summary and disclaimer:

The peri-operative management of antithrombotic drugs for skin surgery varies widely amongst dermatologists, and amongst non-dermatologists. The introduction of newer drugs namely dabigatran, rivaroxaban and apixaban, termed Novel Oral Anticoagulants (NOAC) or Direct Acting Oral Anticoagulants (DOAC) has created the need for additional clinical decisions. A recent survey suggested most departments do not have access to specific guidance on skin surgery and novel anticoagulation (NOAC/DOACs).¹ This leads to a lack of standardisation of care, risking poor outcomes. It can also result in unnecessary last-minute cancellations of surgery causing distress and inefficiency.

This guidance has been developed to complement generic local hospital protocols that mainly relate to major internal surgery. Typically those protocols address procedures with a much larger risk to patients from bleeding than skin surgery, and what constitutes 'minor' skin surgery is often not clearly defined.² This can result in an over-cautious recommendation to stop antithrombotic therapy which may put patients at unnecessary risk.

Skin surgery varies in complexity and bleeding risk, as do the characteristics of individual patients, so temporary cessation of antithrombotic therapy can sometimes be recommended on the balance of risks. We have tried broadly to classify the relative risks of different skin surgery procedures, and the main patient factors that influence problems with bleeding.

This is a guide only and clinical judgement should ultimately determine the degree of risk, particularly for complex patients. Advice from a multidisciplinary team may also be helpful.

Bleeding risk can refer both to the risk *of* bleeding and the risk *from* bleeding. We recommend the continuation of most anti-thrombotic agents for most skin surgery procedures. This is on the basis of evidence of a very low risk of morbidity and mortality from peri-operative bleeding, versus a variable risk of highly morbid or fatal thrombotic events associated with cessation.^{3,4} Many surgeons already avoid stopping any antithrombotic drugs pre-operatively. However the safety of this approach does depend on careful case selection, patient preparation and support, and the choice of therapy. Many high bleeding risk procedures could potentially be avoided altogether.

Individual patients vary in their attitudes towards balancing the risk of post-operative bleeding versus a thrombotic event. Achieving the patient's informed consent is crucial in decision-making for complex skin surgery, as recently redefined by the recent UK supreme court 'Montgomery' ruling.⁵



BSDS Guidance on Antithrombotics and Skin Surgery, August 2016

Limitations of Guidance

This document has been prepared on behalf of the BSDS and is based on the most relevant data and expert opinion available when the document was prepared. A full systematic literature review has not been conducted. It is recognised that under certain conditions it may be necessary to deviate from the guidelines and that the results of future studies may require some of the recommendations herein to be changed. Failure to adhere to these guidelines should not necessarily be considered negligent, nor should adherence to these recommendations constitute a defence against a claim of negligence. Limiting the review to English language references was a pragmatic decision but the authors recognize this may exclude some important information published in other languages.

Background

Risks to patients from haemorrhage or haematoma are mainly inconvenience, pain, prolonged wound healing, failure of graft or flap, and wound infection. Bleeding can also lead to falls or in-patient admission in the elderly. Serious morbidity or mortality is extremely unlikely.⁴ Risk factors can be additive (e.g. multiple drugs + repair type + age >65).

Clearly meticulous operative technique is always required to minimise the risk, but even so bleeding problems can occur. Excessive bleeding during surgery usually responds to more meticulous electrosurgery or vessel tying, followed by a pressure dressing and patient rest and elevation where possible. However some agents can cause prolonged oozing after the local anaesthetic (LA) wears off, or for several days post-op, even if excellent haemostasis is achieved intra-operatively. Therefore reducing this risk by postponing surgery, altering the choice of procedure or repair, or sometimes withholding medications may be prudent. It is also crucial to pay greater attention to post-operative follow-up, considering home support, and day case vs overnight in-patient stay, especially for the elderly.

Key point

Weigh up the risk factors and obtain informed consent for a plan agreed with the patient, other relevant physicians and surgeons, and the patient's family or advocate.

Risk assessment & management

Risk factors for significant post-operative bleeding events

General patient factors

- Previous post-op bleeding episode
- Unable or unwilling to rest post-op
- Poor home support if bleeds
- Bleeding tendency
- Age >65

General risk of bleeding by procedure type (highest to lowest):

Secondary intention wounds following excision

Local flaps

Grafts

Direct closure

Curettage and electrocautery



BSDS Guidance on Antithrombotics and Skin Surgery, August 2016

Specific points about bleeding agents or tendencies

Aspirin

May be taken by patients without clear indication (in which case can be stopped). Otherwise unlikely to cause significant bleeding problems in isolation at 75-300mg od. If necessary stop 10 days pre-op for full reversal, 5 days for 50% efficacy.

Clopidogrel/dipyridamole

Can cause prolonged oozing. Postpone surgery until off drug if possible e.g. sometimes used for 1 year post percutaneous coronary intervention (PCI). If high bleeding risk procedure ask prescriber advice re. risk of stopping clopidogrel for 7 days pre-op and if a substitute drug should be used whilst stopped.

Warfarin

Warfarin targets for different indications may be 2.0-2.5, 2.5, 3.0, or 3.5. Stopping or avoiding not usually justified. Take advice from GP, DVT clinic or Haematology if INR reduction needed.

Novel oral anticoagulants / Direct acting oral anticoagulants (NOACs / DOACS)

The highest thrombotic risk patients tend not to be on these so missing the morning dose on day of surgery, or night before at a minimum, if there is concern about bleeding should pose a low risk. DOAC peak activity is approximately 3hrs after taking. Re-start when haemostasis secure (usually 24hrs post-op or next day).

Fondaparinux, heparin, prasugrel, danaparoid, ticlodipine

Usually used for acute illness or in-patients. Ask prescriber advice & postpone procedures if possible. Small biopsies can usually proceed without delay.

Low molecular weight heparin (LMWH) prophylactic dose usually low risk to proceed if necessary but for treatment dose (e.g. for DVT/PE/MI) take advice.

Combinations of multiple drugs

Shown to increase the risk of bleeding significantly so consider taking advice on modification of regimen if high bleeding risk procedure.

Low platelets or other bleeding tendencies

If platelets are low as an isolated risk factor, but more than 50, most procedures can proceed as normal. For disorders of platelet function or procedures at high risk of bleeding take advice from Haematology about platelet transfusion pre-op.

N.B. some patients may be asked to take aspirin despite having low platelets

Herbal remedies and supplements

Examples include (but are not restricted to): Garlic, Ginger, Ginkgo, Ginseng, Saw Palmetto, Fish Oil (e.g. cod liver), Chamomile, Feverfew. Many can promote bleeding (and other relevant effects). Only likely to be significant for patients on other antithrombotic agents, or those at high risk from post-operative bleeding. Most bodies advise discontinuation of all supplements (including herbal teas) at least 2 weeks pre-operatively, although this takes in all risks including for general anaesthesia interactions, not just bleeding.⁶

Risks to patient from stopping anticoagulation or antiplatelet drugs

Stroke, DVT/PE, MI, death. Stopping these agents is therefore rarely justifiable for the risks of skin surgery bleeding.



BSDS Guidance on Antithrombotics and Skin Surgery, August 2016

Patients who have had thrombotic events on an anticoagulant in the past and those with prosthetic heart valves are at the highest risk. These are the ones who need bridging if stopping their drug.

Mitral are highest risk prosthetic valves for thrombosis.

General tips to reduce risk of bleeding

- Consider postponing surgery until risk factor(s) can be removed or optimised
- Choose safer procedure type if possible or alternative if sufficiently effective e.g. radiotherapy or non-surgical
- Increase home support or admit patient overnight
- Elevate and compress post-op
- Change operative setting (e.g. to improve equipment access, nursing support or more suitable operator)

Contributors:

Lead author:

Dr Adam Bray, Consultant Dermatologist, Bristol.

Guidance lead, BSDS Executive Committee.

The BSDS Executive committee

Dr Amanda Clark, Consultant Haematologist & Coagulation Lead, University Hospitals Bristol NHS Foundation Trust

Bristol skin cancer local and specialist MDTs

Key references:

1. Chiang YZ, Al-Niimi F, Craythorne E, Mallipeddi R. Perioperative management of novel oral anticoagulants in skin surgery: a national survey. *Br J Dermatol*. 2016 [Early online article accessed on 30th May 2016 doi: 10.1111/bjd.14462]
2. National Institute for Health and Clinical Excellence (2015). Clinical knowledge summaries: anticoagulation – oral. *NICE CKS (2015)*.
3. Palamaras I, Semkova K. Perioperative management of and recommendations for antithrombotic medications in dermatological surgery. *Br J Dermatol* 2015; 172: 597-605.
4. Bordeaux JS, Martires KJ, Goldberg D, Pattee SF, Fu P, Maloney ME. Prospective evaluation of dermatologic surgery complications including patients on multiple antiplatelet and anticoagulant medications.. *J Am Acad Dermatol* 2011; 65: 576-83.
5. <https://www.supremecourt.uk/cases/uksc-2013-0136.html> [Accessed on 30th May 2016]
6. UK Medicines information (April 2015). [How should herbal medicines be managed in patients undergoing surgery?](http://www.medicinesresources.nhs.uk/GetDocument.aspx?pagelid=774284) [Online document download]. Retrieved from: <http://www.medicinesresources.nhs.uk/GetDocument.aspx?pagelid=774284> [Accessed on 29th June 2016]
7. Ker K, Beecher D, Roberts I. Topical application of tranexamic acid for the reduction of bleeding. *Cochrane Database of Systematic Reviews* 2013, Issue 7. Art. No.: CD010562. DOI: 10.1002/14651858.CD010562.pub2.



BSDS Guidance on Antithrombotics and Skin Surgery, August 2016

Key operating tips for managing bleeding:

General

- Consider screening for hypertension and asking GP to optimise BP control
- Book longer slot time
- Leave LA to work for longer until adrenaline fully active (i.e. 15-20 mins)
- Use higher concentration of adrenaline if volumes safely allow (i.e. 1:80,000 vs 1:200,000)

Anatomy, positioning and visualisation

- Pay attention to the anatomy of any named vessels expected in the operating field anticipate their position and be ready to clamp/tie/electrocoagulate; especially:
 - frontal branch of temporal artery (at the temple)
 - angular artery (by the nose)
 - facial artery (over the mandible)
- Use good operating light; positioning can help; consider magnifying loupes
- Consider using fine suction or sterile cotton buds to help find bleeding points
- Elevate operative site above heart level if possible

Undermining

- Visualise undermining areas (avoid damaging nearby vessels under the edge)
- Undermine in the correct plane for the anatomical area.

Electrosurgery

- Use bipolar electrosurgery (preferably with a specific coagulation machine rather than Hyfrecator® if possible)
- Use swabs/pressure/assistant to ensure you can see into the operating field to find the bleeding points - this will be quicker and more effective than blind electrosurgery.
- Remember superficial char may work temporarily but can dislodge later. Find the bleeding point and hold the tip(s) in contact for deeper coagulation (i.e. desiccate not fulgurate).
- Remember fluid or tissue (e.g. fat) with high water content conducts too well (i.e. low resistance) to create the heating that is required for effective coagulation - that is why you must blot away any blood, and target the fat septae or vessels, not adipocytes.
- Address any vessels seen straight away whilst you can see them rather than going back later (they may have constricted and contracted away from the wound edge by then, so you won't find them until the LA wears off)
- Tie off any vessels or areas of persistent bleeding if they don't respond quickly to electrosurgery

Post-op

- Use pressure dressings where possible
- For open wounds consider an alginate dressing to absorb exudate and may aid haemostasis
- Remind the patient to elevate the area and rest post-op for 48hrs minimum
- Unless low risk procedure observe higher bleeding risk patients in recovery for minimum 60 mins post-op (to allow time for LA to wear off).
- In rare cases tranexamic acid can be obtained from any trauma areas. Pour vial onto gauze or dressing and apply to wounds that will not stop bleeding otherwise.⁶

British Society for Dermatological Surgery
BLEEDING RISK FOR SKIN SURGERY GUIDANCE
 (see accompanying document for details)

HIGH RISK PROCEDURES (highest risk first)
 -Large secondary intention wounds on non-compressible sites (e.g. eyelids, neck, lip, genitals)
 -Wide excision and direct closure on non-compressible sites
 -Local interpolated flaps (e.g. paramedian forehead flap)
 -Large local flaps on head & neck with wide undermining (e.g. forehead, periocular, cheek, nose, neck, ear)
 -Grafts on non-compressible sites

HIGH RISK PATIENT FACTORS
 (highest risk first)

-Previous post-op bleeding episode
 -Unable/unwilling to rest post-op
 -Poor home support if bleeds
 -Bleeding tendency
 (Age >65)

STRATIFY PROCEDURE RISK

ISOLATED PROCEDURE RISK
 (highest risk first)

-Secondary intention
 -Flaps
 -Grafts
 -Direct closure

ACTIONS THAT MAY REDUCE RISK

Postpone
 Choose safer surgical procedure (or radiotherapy or non-surgical)
 Increase support or admit patient
 Elevate and compress post-op
 Change operative setting (e.g. to improve equipment access, nursing support or more suitable operator)

SPECIFIC ADVICE ON BLEEDING AGENTS/TENDENCY
 (drugs in order of risk lowest to highest)

BLEEDING TENDENCY
 Von Willebrand
 Haemophilia
 Low platelets

Take advice from
 Haematology/Haemophilia centre
 Platelets >50 satisfactory

HIGH RISK PROCEDURE

ASPIRIN

LOW/MODERATE RISK PROCEDURE

Continue

DIPYRIDAMOLE

Continue

INR <3.5
 2-2.5 if therapeutic range allows

WARFARIN

INR <3.5

CLOPIDOGREL

Consider stopping 24-48hrs pre-op (take advice)

NOAC/DOAC
 e.g dabigatran, rivaroxaban, apixaban

Continue

Stop any unintended prescription (check with GP/prescriber)
 Consider postponing if near end of course
 Consider stopping clopidogrel or 1 agent (take advice)

COMBINATIONS

OTHER ACUTE AGENTS
 Fondaparinux, heparin, prasugrel, danaparoid, ticlopidine

Postpone

HERBS & SUPPLEMENTS
 (including teas)

Stop 2 weeks pre-op

Risk Stratification of skin surgery procedures

Low risk procedures	Moderate risk procedures	High risk procedures
Curettage	Excision and direct closure on non-compressible areas (neck, lip, genitals)	Secondary intention wounds on non-compressible sites
Punch biopsy	Wide excision and direct closure on trunk & limbs	Excision within the orbit (e.g. eyelids)
Incisional biopsy- scar length <10cm	Secondary intention wounds on compressible sites	Where bone is involved
Excision and direct closure on trunk, limbs, or compressible head & neck sites (scar length <10cm)	Grafts on compressible sites (& split thickness graft donor sites)	Local flaps on head & neck with wide undermining (e.g. forehead, periocular - especially orbital, cheek, large nose flaps, neck)
	Small local flaps (e.g. rhombic on nose, or wedge or helical rim advancement on ear)	Local interpolated flaps (e.g. paramedian forehead flap)
		Wide excision and direct closure on non-compressible sites (e.g. neck)
		Grafts on non-compressible sites