CHALLENGES OF MANAGING SURGICAL WOUNDS POST DISCHARGE

TUESDAY 30 MARCH 7.30-8.30

FACEBOOK LIVE



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LEARNING OBJECTIVES

- Surgical site infection (SSI) and prevalence
- Post-surgical wound healing
- Causes of SSI
- Post-operative interactive dressings
- Clinical guidance
- Managing wound dehiscence
- Patient impact and experience
- Algorithm development
- Antimicrobial stewardship (AMS)





WHAT IS A SURGICAL SITE INFECTION?

Infectious process present at the site of surgery with clinical signs and symptoms of infection, including:

- Heat, redness and swelling
- Elevated body temperature
- Purulent exudate from the wound or drain
- Usually occurs within one week of surgery







SURGICAL WOUND PREVALENCE





(adapted from Guest, 2021)



CURRENT SITUATION

- NHS spends £8.3 billion on the management of patients with wounds
- In 2017/18 3.8 million patients were treated in the NHS for a wound
- 14% (519,000) surgical wounds
- Of these, 35% had a recorded infection
- 15% of surgical wounds failed to heal in 12 months





CURRENT SITUATION

- 43% of surgical wounds had prescribed antibiotics
- 8% attended Accident and Emergency
- 8% required hospital admission (but no surgery)
- 6% required hospital admission and surgery
- Total average cost of managing patients with surgical wounds = £1,054 per patient

(Guest et al, 2020)









written permission and appropriate acknowledgment

TYPES OF WOUND HEALING

Primary intention

Secondary intention

Larger scab (clot)



Inflammation more intense because there is more necrotic debris, exudate and fibrin to remove

Larger amounts of granulation tissue larger defect

Involves wound contraction





WOUND HEALING





SURGICAL SITE INFECTION







CAUSES — RECOGNISING SSIS

- Intrinsic factors (patient's own risk factors)
- Extrinsic factors (environment or equipment)
- Bacteria:
 - Staphylococcus aureus
 - Coagulase-negative *Staphylococci*
 - Gram negative *Bacilli*
 - Anaerobes
 - Group B Streptococci







WOUND DEHISCENCE

Partial dehiscence or complete disruption?

Causes:

- Surgical error
- Wound infection
- Wound ischaemia
- Trauma
- Mechanical stress
- Increased intra-abdominal/compartment pressure
- Haematoma/seroma
- Pre-existing chronic disease







SURGICAL WOUND CLOSURE

Skin closure achieved:

Clips



Sutures



Tissue glues







SURGICAL WOUND CLOSURE

Closure choice:

- Type and anatomical location of the wound
- Thickness of the skin
- Degree of tension
- Desired cosmetic result
- Consultant!





SURGICAL WOUND COMPLICATIONS

Seroma:

- Filled with serous fluid, lymph or blood
- Fluctuation, swelling, redness and tenderness

Haematoma:

- Bleeding, anticoagulant
- Risk of infection
- Swelling, fluctuation, pain and redness









SUPERFICIAL SSI

















ORGAN SPACE SSI







FACTORS WHICH MAY INCREASE RISK OF SSI

- Patient?
- Environmental?
- Closure choice?
- Suture type?
- Technique?
- Skin prep?
- Secondary dressing?







WOUND DRESSING

NICE (2017) SSI guidelines says:

'Cover surgical incisions with an appropriate interactive dressing at the end of the operation.'

'Interactive dressing Modern (post-1980) dressing materials. Designed to promote the wound healing process through the creation and maintenance of a local, warm, moist environment underneath the chosen dressing, when left in place for a period indicated through a continuous assessment process.'





NATIONAL WOUND CARE STRATEGY PROGRAMME





Recommendations for Surgical Wounds

'*Cover surgical incisions with an appropriate interactive dressing*'. (NWCSP, 2021)





NATIONAL WOUND CARE STRATEGY PROGRAMME





For further information, please refer to the full NWCSP Recommendations at NationalWoundCareStrategy.net

Key recommendations

for all theatre staff.

Avoid routine use of

of operating area.

skin preparation.

surgical incision.

homeostasis.

risk of SSI.

Only apply

· Do not use diathermy for

Seek to maintain patient

a clinical research trial.

· Use digital wound imaging.

Cover surgical incisions with an

appropriate interactive dressing.

incise drapes.

team.

Hand decontamination.

non-iodophor-impregnated

Sterile gowns for the operating

Two pairs of sterile gloves, if

high risk of glove perforation.

· Minimise movement in and out

Follow NICE advice for antiseptic

Do not use wound irrigation or

intracavity lavage to reduce the

antiseptics/antibiotics as part of

Specific non-sterile theatre wear

patients.

Pre-Surgery Assessment and Information

Delayed healing can be due to:

- Lifestyle factors.
- Pre-existing co-morbidities.
- Psychological and social factors
- Cultural and ethnicity factors.

Before surgery, as part of assessment, discuss:

- Lifestyle factors.
- Recent travel history.
- Current MRSA/VRE status or need for screening. Current medical conditions.
- And address any modifiable issues.

Pre-Operative Phase

(24 hours before surgery)

that may impact on care

use clippers, not razors.

b. Nasal decolonisation.

a. Shower or bathe before surgery.

c. Avoid routine hair removal: if necessary,

d. Avoid routine mechanical bowel preparation.

e. Follow NICE advice for antibiotic prophylaxis.

- Patients undergoing elective surgery should: Be assessed to stratify risk of SSI/SWD.
- · Receive written information specific to type of surgery.

Address any cultural/ethnic/religious factors

Intra-Operative Phase

Key recommendations

- Appropriate theatre wear for Aseptic non-touch technique for dressing changes.
 - Monitor pain and offer appropriate analgesia.

Post-Operative Phase

- Base wound assessment on NWCSP minimum data criteria.
- Digital wound imaging.
- Sterile saline for wound cleansing for 1st 48 hours, then potable tap water/showering.
 - Do not use topical antimicrobial agents for surgical wounds healing by primary intention.
- Monitor for signs of surgical site infection (SSI) / Surgical Wound Dehiscence (SWD).
- Report SSI/ SWD up to 30 days after surgery (or up to 90 days after surgery in patients receiving implants).
- Provide patients/carers and clinicians with:
- Detailed written information about received and ongoing care.
- When and how to seek advice from the surgical team.
- Dressings for one week
- Name of person responsible for overseeing ongoing care.
- Use a structured approach to improve care that involves specialist wound care services.

Ongoing Care after Transfer from Care of the Surgical Team

RED FLAGS

- Treat as an emergency situation Haemorrhage/Catastrophic dehiscence.
- 'burst abdomen' with visible internal organs.

M Arrange for immediate review by the senior clinical decision maker

- Systemic signs of infection/sepsis.
- Follow NICE Guideline for Sepsis: Recognition, **Diagnosis and Early Management.**
- Seek review by surgical team within 24 hours
- Spreading cellulitis, or
- Dehiscence if:
- Surgery involved implants (e.g. mesh, prosthesis). Aesthetically or functionally important surgical site (e.g. face or joints).

Seek review by surgical team within 72 hours

- Dehiscence exposing subcutaneous layers and fascia.
- Suspected sinus/fistula/tunnelling
- Stoma within wound boundaries.

Other failures to heal

· Seek review by clinician with surgical wound expertise who can escalate directly to surgical team as needed.

Suspected Wound Infection (without red flag symptoms)

- Wound swab for microbiology.
- Bloods for full blood count and C-reactive protein (CRP). - Digital wound image.
- If concerned, seek review by surgical team within 72 hours.
- Only commence antibiotic therapy following consultation with the surgical team.

(NWCSP, 2021)



Journal of Community Nursing 🥌

INTERACTIVE?







NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE (NICE)

NICE is an independent organisation responsible for providing national guidance and advice to improve health and social care.







NICE: MEDICAL TECHNOLOGIES GUIDANCE

Provides recommendations for new or existing medicines, devices and procedures.







NICE: MEDICAL TECHNOLOGIES GUIDANCE

Recommendations based on a review of clinical and economic evidence:

- Clinical evidence shows how well the medicine or treatment works
- Economic evidence shows how well the medicine or treatment works in relation to how much it costs the NHS — does it represent value for money?

1 Recommendations

- 1.1 Evidence supports the case for adopting Leukomed Sorbact for closed surgical wounds after caesarean section and vascular surgery.
- 1.2 Leukomed Sorbact should be considered as an option for people with wounds that are expected to have low to moderate exudate after caesarean section and vascular surgery. It should be used as part of usual measures to help reduce the risk of surgical site infection. More evidence is needed on the use of Leukomed Sorbact on wounds after other types of surgery.
- 1.3 Cost modelling shows that the reduced rate of surgical site infection with Leukomed Sorbact compared with standard surgical dressings leads to savings of:
 - £107 per person after caesarean section
 - £18 per person after vascular surgery.

By adopting this technology, the NHS may save up to ± 5.3 million per year for caesarean section and up to ± 1.2 million per year for vascular surgery. Cost savings are expected because fewer people will need to stay in hospital for treatment of surgical site infection. For more details, see the <u>NICE resource impact report</u>.

(NICE, 2021)





THE TRUE CONSEQUENCE









THE TRUE CONSEQUENCE









PATIENT IMPACT

Initial reaction to wound breakdown:

- Alarm
- Shock
- Disbelief
- Unexpected







PATIENT IMPACT CONTINUED

Profound negative effect on patients quality of life:

- Physical and psychosocial functioning
- Wellbeing
- Feeling of frustration, powerless, guilt, debilitating
- Unrealistic hopes of healing times (McCaughan et al, 2018)





PREVENTION

Follow nationally agreed:

- Standard infection control precautions
- SSI care bundles (theatres and wards)
- Evidence-based SSI interventions







HEATHER HODGSON LEAD NURSE TISSUE VIABILITY



MANAGING WOUND DEHISCENCE

Synonyms for surgical wound dehiscence (SWD):



Definition:

- Separation of the margins of a closed surgical incision
- May occur at single or multiple regions, or involve the full length of the incision, and may affect some or all tissue layers (World Union of Wound Healing Societies [WUWHS], 2018)



SURGICAL WOUND DEHISCENCE IS NOT ALWAYS DUE TO SSI

- Unfortunately, some clinicians view SWD as synonymous with infection
- Surgical wound dehiscence can increase the risk of SSI
- Surgical wound dehiscence may not be caused by SSI and so may not require treatment for infection
- Not all infected or inflamed wounds dehisce (WUWHS, 2018)





SURGICAL WOUND DEHISCENCE IS NOT ALWAYS DUE TO SSI CONTINUED





(adapted from WUWHS, 2018)



CAUSES OF WOUND DEHISCENCE

Three categories of the causes of SWD (WUWHS, 2018).







ALFIE'S STORY

- Mum and baby admitted for 1cm dehisced wound (Christmas Eve)
- Intravenous antibiotics
- Lack of understanding of wound assessment
- Lack of understanding of appropriate wound management (TVN referral made)
- Another full day in hospital post discharge







GREATER GLASGOW AND CLYDE MATERNITY WOUND GUIDELINE

All women who have a caesarean section, episiotomy or perineal suturing have postoperative/perineal wound care receive:

- Clinically effective care
- Evidence-based care
- Effective strategies to reduce the risk of postnatal/post-operative wound complications







GREATER GLASGOW AND CLYDE MATERNITY WOUND GUIDELINE

- Dedicated to Alfie
- In partnership with industry the guidelines were developed and implemented
- Led to appropriate wound management following AMS guidance
- Reduction of wounds requiring TVN input





ANTIMICROBIAL RESISTANCE (AMR)

- AMR is one of the biggest threats to global health
- AMR can affect anyone, of any age, in any country
- Misuse of antibiotics in humans is accelerating AMR process







ANTIMICROBIAL RESISTANCE (AMR) CONTINUED

- A growing number of infections, such as pneumonia, tuberculosis, gonorrhoea and salmonellosis, are becoming harder to treat
- Leads to longer hospital stays, higher medical costs and increased mortality (World Health Organization [WHO], 2020)





ANTIBIOTIC USE IN SURGICAL WOUNDS

43% of surgical wounds in the community during the study period had at least one course of antibiotic prescribed (Guest et al, 2020).







ANTIMICROBIAL TREATMENT SELECTION: THE FIVE RIGHTS

For the appropriate prescribing of topical antimicrobials in wound care:

- 1. Right diagnosis and care plan
- 2. Right antimicrobial and right delivery system
- 3. Right time to initiate antimicrobial treatment
- 4. Right antimicrobial dose
- 5. Right duration of antimicrobial treatment (Wounds UK, 2020)







SCOTLAND ANTIMICROBIAL STEWARDSHIP MEETING IN PARTNERSHIP WITH ESSITY

Aim of the group is to explore:

- Meaning of AMS
- AMS challenges
- AMS ownership
- Knowledge of the infection continuum
- Value of clinical pathways
- Collaborative working in Scotland







SUMMARY

- Explored SSI
- Reviewed the value of guidelines and introduced the NICE medical technologies guidance
- Highlighted the importance of prevention of SSI
- Explored the relationship between SSI and SWD
- Presented real-life examples relating to SWD
- Demonstrated practical solutions for wound management





LINKS TO BEST PRACTICE

Obtain links to NICE Medical Technologies Guidance from https://www.nice.org.uk/ guidance/mtg55 and Best Practice Statements from: concierge.service@essity.com







REFERENCES

Guest JF, Ayoub N, McIlwraith T, et al (2015) Health economic burden that wounds impose on the National Health Service in the UK. Available online: <u>https://bmjopen.bmj.com/content/bmjopen/5/12/e009283.full.pdf</u>

Guest JF, Fuller GW, Vowden P (2020) Cohort study evaluating the burden of wounds to the UK's National Health Service in 2017/2018: update from 2012/2013. Available online: <u>https://bmjopen.bmj.com/content/10/12/e045253</u>

Guest J (2021) Burden of wounds to the NHS: what has changed since 2012/13? Wounds UK17(1): 10-15

McCaughan D, Sheard L, Cullum N, Dumville J, Chetter I (2018) Patients' perceptions and experiences of living with a surgical wound healing by secondary intention: A qualitative study, *Int J Nurs Stud* 77: 29-38

NICE 2021 Leukomed Sorbact for preventing surgical site infection. Available from <u>https://www.nice.org.uk/guidance/mtg55</u>. All rights reserved. Subject to Notice of rights. NICE guidance is prepared for the National Health Service in England. All NICE guidance is subject to regular review and may be updated or withdrawn. NICE accepts no responsibility for the use of its content in this publication.





REFERENCES

NWCSP (2021) Recommendations for surgical wounds. Available online: <u>https://www.ahsnnetwork.com/wp-content/uploads/2021/02/Surgical-Wound-Recommendations-WEB-</u> <u>25Feb21.pdf</u>

World Health Organization (2020) Antibiotic resistance. Available online: <u>https://www.who.int/news-</u> <u>room/fact-sheets/detail/antibiotic-resistance</u>

World Union of Wound Healing Societies (WUWHS) *Consensus Document. Surgical wound dehiscence: improving prevention and outcomes*. Wounds International, 2018

Wounds UK (2020) *Best Practice Statement: Antimicrobial stewardship strategies for wound management*. Wounds UK, London



