Appendix 1 - Intravenous access and blood pressure monitoring in patients with previous axillary nodal dissection

Purpose

To support anaesthetists in providing contemporary advice regarding the use of intravenous access and required anaesthesia monitoring in patients with a prior history of axillary nodal dissection.

Scope

This appendix applies to the management of adult patients with a prior history of axillary nodal dissection, requiring anaesthesia or sedation.

The information presented may also apply to these patients when requiring healthcare for other purposes.

Background

Upper limb lymphoedema is a significant complication that may arise following the removal of axillary lymph nodes. It refers to a generalised abnormal collection of protein-rich interstitial fluid that is associated with oedema and altered tissue structure.[1] The International Society of Lymphology describes four stages of lymphedema, ranging from sub-clinical (Stage 0) to overt (Stages I-III).[2] In Stage 0 there may be subjective symptoms with minimal visible tissue changes.

Patients with upper limb lymphoedema may suffer significant discomfort, wear compression bandages and are at risk of poor healing following trauma or infection of the affected limb. In an effort to reduce such complications secondary to lymphoedema, patients have traditionally been advised to avoid unnecessary trauma to the affected limb.[3] This has included the avoidance of unnecessary intravenous access, venepuncture and blood pressure monitoring in the affected arm, despite limited supporting evidence.[4] This advice has inadvertently extended to those with limited nodal resection (for example sentinel lymph node biopsy) and for those in whom an axillary dissection has occurred, but lymphoedema is not present.

Fellows of the college reported restrictions on anaesthesia care (intravenous access and blood pressure monitoring) arising when patients declined the use of the affected arm. Strategies to reinforce “avoiding the affected arm” have become embedded in many healthcare institutions.

PG18(A) provides ANZCA recommendations regarding monitoring during the administration of anaesthesia. Safe provision of anaesthesia requires secure intravenous access and cardiovascular monitoring including regular blood pressure monitoring.

This appendix summarises current recommendations related to intravenous access and anaesthesia monitoring in patients with previous axillary nodal dissection. It was developed to support fellows in providing optimal anaesthesia care to these patients. The aim is to facilitate approved anaesthesia management and monitoring and provide evidence-based education for patients and other healthcare staff.

Axillary nodal dissection may be necessary for cancer treatment, including melanoma and breast cancer and may be unilateral or bilateral. “Avoiding the affected arm” presents difficulties for patients and anaesthetists and may impact anaesthesia care in the following ways:

- Restricting peripheral intravenous access to one arm, in which the veins rapidly become “overused”, which adversely impacts the patient experience.

- Restricting the size of achievable peripheral intravenous access and intravenous fluid administration rates.

- Necessitating non-invasive blood pressure monitoring to be undertaken on the same side as the intravenous access. This may interfere with drug administration, particularly intravenous maintenance anaesthesia.

- In cases of bilateral axillary dissection, necessitating peripheral intravenous access and non-invasive blood pressure monitoring on the lower limbs, risking increased patient discomfort, infection and inaccurate measurements. Central venous access, with attendant risks, has also been used as alternative to upper limb peripheral cannulation.

Monitoring and intravenous access in patients with previous axillary nodal dissection:

1. Intravenous access:

- Consistent with ACSQHC Clinical Care Standard,[5] peripheral cannulae should be inserted using aseptic technique and remain in-situ for the shortest required duration.

- There is limited and poor evidence to support the avoidance of peripheral cannulation in the impacted arm, particularly when lymphoedema is not present.[3]

- If significant lymphoedema is present and no veins visible on the affected arm, the benefits of using the contralateral arm or alternative locations/methods are greater.[3]

- In the absence of lymphoedema, the risks of central venous access are likely to outweigh the benefits, if avoidance of the affected arm(s) is the only indication for central venous access.

2. Blood pressure monitoring

- There is limited and poor evidence to support the avoidance of non-invasive blood pressure monitoring on the affected arm(s).[3]

- The risks of invasive arterial monitoring are likely to outweigh the benefits, if the only indication is avoiding non-invasive monitoring of the affected arm(s) or avoiding ipsilateral intravenous access and non-invasive blood pressure measurement.

Recommendations

1. Shared decision-making:

- Anaesthetists should communicate the importance of safety and optimisation of anaesthesia administration in this setting to allow patients to make informed decisions.

2. Institutional considerations.

- To facilitate shared decision-making, as well as staff and patient education, institutions should remove universal recommendations, such as wrist-band or standardised alerts, that relate to patients who have a history of axillary dissection.

3. For patients who have had axillary nodal dissection and do not have lymphoedema of the affected arm, there is no contraindication to:

- Non-invasive blood pressure monitoring using the affected arm.

- Peripheral intravenous cannulation in the affected arm.

- Arterial line insertion and monitoring in the affected arm if clinically indicated.

4. For patients WITH lymphoedema of the affected arm following axillary nodal dissection (Stages 0-III):

- An alternative site should be contemplated where practicable, considering the relative risk associated with more invasive procedures. There is no absolute contraindication to using the affected limb for monitoring and intravenous access.

- Ongoing monitoring of peripheral intravenous cannulae should be done in accordance with the ACSQHC Clinical Care Standard.[5]

References

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