

Title:

A Retrospective Review of Microbial Outcomes Following Organ Donation

Authors:

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Background:

Tissue recovery after organ donation is essential for meeting clinical needs for musculoskeletal and cardiovascular allografts, including hemipelvis, ilium, pericardium, costal cartilage, ribs, and heart valves. Concerns about contamination arise as donors are often returned with unclosed surgical incisions, placed in non-sterile environments such as morgues or hospital units, and subject to variable post-mortem intervals. Despite these factors, studies have shown that recovery under standard protocols does not necessarily result in increased contamination.

Hypothesis:

We hypothesized that recovery of specific tissues from post-organ donors, regardless of incision closure, recovery setting, or time delay, does not result in clinically significant contamination when standard recovery protocols are followed.

Methods:

A retrospective review was conducted from January 1, 2023, to December 31, 2024 (study period), using de-identified internal patient donor data in compliance with regulatory standards. Cultures were analyzed at the donor level to prevent overrepresentation. Donors were included regardless of incision status, environment, or procedural delay. Donors with cultures from miscellaneous or undefined tissue types were excluded. Positive cultures were reviewed for organism type and virulence. All recoveries followed AATB and FDA protocols.

Results:

During the study period, 1,526 donors met the inclusion criteria; 901 (59.0%) had at least one positive culture, while 625 (41.0%) had none. A total of 5,802 cultures were analyzed: 2,905 (50.1%) yielded bacterial growth and 2,897 (49.9%) were culture negative. Most cultures yielded low-virulence microorganisms; the number of donors with these microorganisms are as follows: *Cutibacterium acnes* (356; 23%), Coagulase-negative staphylococcus (310; 20%), or nonviable Gram-positive cocci (80; 5%). In contrast, 16 (1.0%) donors had *Clostridium perfringens* and 22 (1.4%) donors had *Pseudomonas aeruginosa*. These findings mirror rates reported in controlled environments and support prior data that cooler settings and shorter exposure times in non-OR environments are associated with lower contamination rates.

Conclusions:

This analysis supports the microbial safety of recovering musculoskeletal and cardiovascular tissues from the chest, abdomen, and pelvis of post-organ donors, even when procedures occur under non-ideal conditions, provided AATB and FDA protocols are followed. No individual factor, such as open incisions, recovery location, or delay, was found to compromise tissue integrity. When performed according to FDA and AATB protocols, recovery remains both effective and safe. These findings underscore that consistent recovery, screening, and sterilization standards effectively mitigate contamination risk.

Ethical Considerations:

This study used de-identified, retrospective data in compliance with organizational and regulatory standards. No patient contact occurred. All recoveries followed AATB and FDA protocols.

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HYPOTHESIS

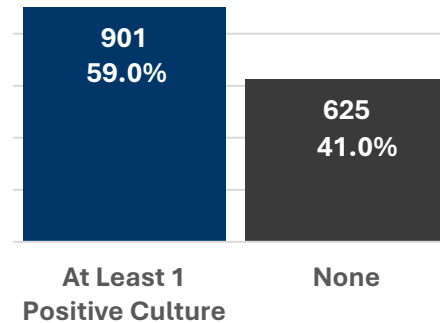
Recovery of musculoskeletal and cardiovascular tissues from post-organ donors does not result in clinically significant contamination when standard protocols are followed.

METHODS

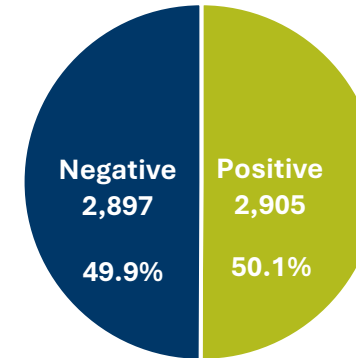
- Retrospective review during from January 1, 2023, to December 31, 2024 (study period).
- Cultures analyzed at the donor level to prevent overrepresentation.
- Donors included regardless of incision status, environment, or procedural delay.
- Donors with cultures from miscellaneous or undefined tissue types were excluded.
- Positive cultures were reviewed for organism type and virulence.
- All recoveries followed AATB and FDA protocols.

RESULTS

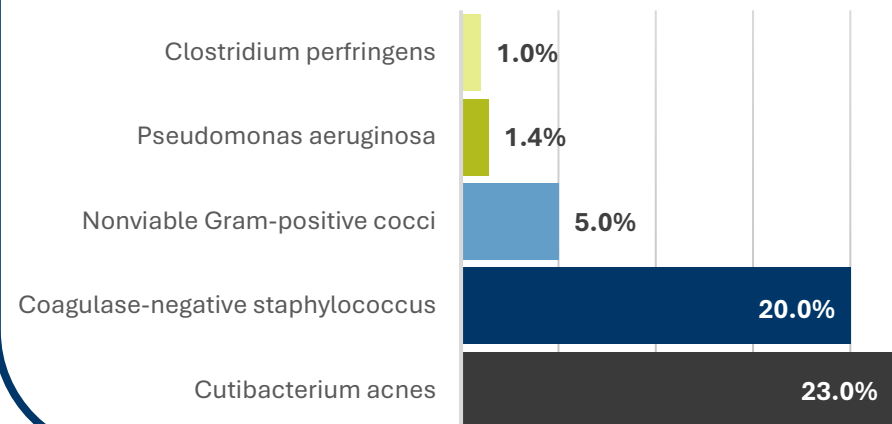
Donor Inclusion Criteria



Culture Outcomes



BREAKDOWN OF MICROORGANISMS



CONCLUSIONS

- The majority of microorganisms isolated from tissues recovered from post-organ donors are non-virulent skin commensals.
- Recovery remains safe and effective under FDA/AATB protocols, even with open incisions, variable recovery locations, and delays.
- Adherence to these Guidelines mitigates risk of tissue contamination.

ETHICAL CONSIDERATIONS

This study used de-identified, retrospective data in compliance with organizational and regulatory standards. No patient contact occurred. All recoveries followed AATB and FDA protocols.

To read the full AATB submission, scan this QR code.