AUTOLOGOUS TISSUE MANAGEMENT

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MEDICAL ABBREVIATIONS & ACRONYMS

AATB – American Association of Tissue Banks
CDC – Centers for Disease Control and Prevention
CFR – Code of Federal Regulations
CHG – Chlorhexidine gluconate
CLIA-88 – Clinical Laboratory Improvement Amendments of 1988
DMEM – Dulbecco's modified Eagle's medium
EO – Ethylene oxide
FDA – US Food and Drug Administration
H_2O_2 – Hydrogen peroxide
IFU – Instructions for use
PSI – Pounds per square inch
RCT – Randomized controlled trial
RPMI – Roswell Park Memorial Institute
SSI – Surgical site infection
THA – Total hip arthroplasty

GUIDELINE FOR AUTOLOGOUS TISSUE MANAGEMENT

The Guideline for Autologous Tissue Management was approved by the AORN Guidelines Advisory Board and became effective as of December 9, 2019. The recommendations in the guideline are intended to be achievable and represent what is believed to be an optimal level of practice. Policies and procedures will reflect variations in practice settings and/or clinical situations that determine the degree to which the guideline can be implemented. AORN recognizes the many diverse settings in which perioperative nurses practice; therefore, this guideline is adaptable to all areas where operative or other invasive procedures may be performed.

Purpose

This document provides guidance for preserving **autologous tissue**, including cranial bone flaps, parathyroid glands, skin, vessels (eg, veins, arteries), femoral heads, incus, and adipose tissue, in the perioperative setting. Guidance is also provided for team communication related to autologous tissue management; handling, packaging, labeling, storage, disposal, cleaning, transport, and documentation of autologous tissue; and policies and procedures for preservation and delayed **replantation** or **autotransplantation** of autologous tissue within the same facility.

Preserving and replanting autologous tissue may improve the patient's long-term outcomes. Some types of autologous tissue (eg, cranial bone flaps, parathyroid glands) are preserved because the patient's clinical symptoms (eg, swelling, hormone levels, infection) prevent the tissue from being replanted or autotransplanted during the same procedure in which it was removed. Other types of autologous tissue (eg, veins, skin, adipose tissue) are preserved because the tissue was harvested but was not all used during the original procedure and may be needed for a future procedure (eg, cardiovascular bypass graft, skin graft). In addition, the use of autologous tissue may be preferred over the use of **allograft** tissue or synthetic tissue implants in certain situations. Following good tissue practices described in 21 Code of Federal Regulations (CFR) Part 1271 Subpart D[1] and evidenced-based guidance for autologous tissue management may

- decrease the patient's risk for infection;
- decrease the risk for a packaging, labeling, or tissue identification error;
- decrease the risk to perioperative personnel of exposure to blood and other potentially infectious materials; and
- preserve the clinical viability of the tissue.

The following topics are outside the scope of this document:

- autologous tissue that is replanted into the patient during the same procedure in which it was removed (eg, tendons, ligaments, osteochondral grafts, fractional skin grafts, epidermal grafts);
- autologous blood products;
- autologous islet cell or stem cell transplantation;
- autologous cartilage used for staged microtia reconstruction procedures;
- autologous bone that is exposed to cryotherapy, radiation, or thermal therapy for eradication of cancer and replanted during the same procedure in which it was removed;
- tissue-engineered grafts grown from autologous cells;
- allograft organ or tissue transplantation;
- allograft fecal microbiota transplantation; and
- xenogeneic tissue (eg, bovine or porcine implants).

Refer to the AORN Guideline for Specimen Management[2] for information regarding surgical specimens and the AORN Guideline for Sterilization Packaging Systems[3] for recommendations on packaging systems for sterilization.

Evidence Review

A medical librarian with a perioperative background conducted a systematic search of the databases Ovid MEDLINE®, Ovid Embase®, EBSCO CINAHL®, and the Cochrane Database of Systematic Reviews. The search was limited to literature published in English from January 2014 through October 2018. At the time of the initial search, weekly alerts were created on the topics included in that search. Results from these alerts were provided to the lead author until February 2019. The lead author requested additional articles that either did not fit the original search criteria or were discovered during the evidence appraisal process. The lead author and the medical librarian also identified relevant guidelines from government agencies, professional organizations, and standards-setting bodies.

Search terms included *adipose aspirates, adipose tissue, autograft, bone flap, bone resorption, bone transplantation, cell culture techniques, cranial edema, craniotomy, cryopreservation, decompressive craniectomy, fat grafting, intercranial hypertension (surgery), internal mammary artery, internal mammary artery implantation, internal thoracic artery, mammary arteries, ossiculoplasty, parathyroid glands, pedicle flap, radial artery, renal artery, saphenous vein, skull (microbiology, cytology, surgery), sterilization (methods), sterilization and disinfection*