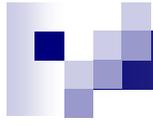




New developments in Cell Salvage

Malcolm Chambers
Transfusion Practitioner
UHL



New Developments in C/S

- Companies have added a few more bells and whistles to machines.
- Data Management systems



New Developments in Clinical use

- Cancer surgery / Urology, evolving practice
- Ob's



New Developments in Cell Salvage

- **National guidelines**

- **UKCSAG** (UK Cell Salvage Action Group)

- **Nice/** (Use of Cell Salvage in Ob's/Urology)

- **MHRA /AAGBI** (Filters)

- **SHOT** (Incident reporting)



Patient Safety

■ MHRA (Jan 2011)

BLOOD SUCCOUR?

MHRA is aware of reports of patients becoming hypotensive whilst receiving cell salvaged autologous blood which has been passed through a leukocyte depletion filter during obstetric and urology procedures. Evidence suggests that this is a rare side effect.

Be aware of this possible rare side effect when using this type of filter for obstetric and urology procedures. The root cause of these reactions has not been conclusively established.

However, this filter is intended for removal of leukocytes, fat particles and microaggregates and has not been validated, by the manufacturer for removal of amniotic fluid, foetal material or malignant cells.

The MHRA has issued guidance in Medical Device Alert MDA/2010/001. AAGBI and NICE have also both issued advice on this problem.

Reporting adverse events and reactions relating to Cell Salvage to SHOT

Guide for staff involved in the use of peri-operative and post operative cell salvage equipment

Introduction

SHOT is providing a new way to report adverse event and reactions related to the use of intra operative and post operative cell salvage. Following the successful pilot of the Cell Salvage incident reporting study, it was decided to include the reporting of these incidents into the new SHOT Dendrite online database.

What to report to SHOT

Any adverse events or reactions associated with intraoperative (ICS) and postoperative (PCS) cell salvage (washed or unwashed). Please note that adverse events and reactions associated with acute normovolaemic haemodilution and PAD (pre-operative autologous donation) can also be reported to SHOT but not via the cell salvage pathway. They must be reported to the hospital transfusion team in the same way as adverse events are reported for donor blood. In the table below is the list of trigger events to report and the categories that they fall into.

Category	What to report
Operator error	Equipment not assembled correctly to include both collection and processing equipment
	Incorrect dilution of heparinised saline
	Non IV Saline used for the wash
	Contraindicated substances aspirated into the collection reservoir
	Time exceeded for collection and/or Reinfusion for either ICS or PCS
	Reinfusion bag not labelled for the patient - either ICS or PCS
	PCS system not assembled correctly
Machine/System failure	Any stoppage of the machine where the operator has not made the decision to halt the procedure
	Reinfusion bag falls off (PCS)
Category	What to report
Clinical events for either ICS or PCS	Pulmonary Embolus
	Arterial embolus
	Coagulopathy
	Air Embolus
	Pulmonary Embolus
	Hypotensive episode on Reinfusion of processed red cells

Making the Report

Please use a copy of the SHOT Dendrite data collection form to collect the data required to make the report. *Once you have collected the data required for the report, please send it to the Hospital Transfusion Team who will enter the data onto the SHOT Dendrite database.*



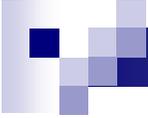
UKCSAG

UK Blood Transfusion & Tissue Transplantation Services

www.transfusionguidelines.org.uk

Better Blood Transfusion *Toolkit*

- UK Cell Salvage Action Group
 - Introduction
 - Getting Started
 - Framework for Service Provision
 - ICS Education
 - Cell Salvage Competency Workbooks
 - Practicalities of Service Provision
 - Patient Factsheets
 - Technical Factsheets and Frequently Asked Questions
 - Adverse event reporting
 - Newsletters
 - Contacts



NOS / KSF



https://tools.skillsforhealth.org.uk/competence_search/

- PCS19 Prepare equipment for intra-operative blood salvage collection
- PCS20 Operate equipment for intra-operative blood salvage collection
- PCS21 Prepare equipment for processing intra-operative salvaged blood
- PCS22 Operate and monitor equipment for processing intra-operative salvaged blood and complete salvaged blood processing

Updated March 2011



January 2011

To: Whom it may concern

Re: Standard UK Autologous Transfusion Label

Dear Colleague,

Labelling of autologous salvaged red cells is as important as the labelling of allogeneic (donor) units. There is no standard label in use across the UK. Whilst some hospitals have developed their own label; or use the labels provided by the companies; in some cases there is no labelling at all. If a label is not routinely completed and appropriately attached to salvaged blood, a significant risk of error on reinfusion of the salvaged blood exists.

To address this issue and to help promote the safe and appropriate use of cell salvage, the UK Cell Salvage Action Group developed and piloted a generic label for autologous blood. The label was piloted in both Intraoperative and Postoperative Cell salvage and a review process was undertaken based on feedback received. The final label is now available and its use is encouraged to help standardise practice through the routine labelling of cell salvage blood in all hospitals throughout the UK.

The label is free and is now available from most UK Intraoperative and Postoperative Cell Salvage companies. Please contact your cell salvage supplier for more details on how to receive the labels.

In conjunction with the labels the UK Cell Salvage Action Group has developed:

- Guidance for completion of the autologous transfusion label
- Presentation for use by hospitals giving a step by step guide to completing the label

These can be downloaded from the Better Blood Transfusion Toolkit at www.transfusionguidelines.org.uk

The UK Cell Salvage Action Group recommends the use of the standard UK label and identifies the use of the label as "best practice". The cell salvage manufacturers have been supportive in funding the provision of the labels for their customers and we would urge you to promote their use in your organisation.

Thank you in anticipation of your support with this important safety initiative. Please do not hesitate to contact either of us if you have any queries.

Yours sincerely,

Joan Jones

A handwritten signature in black ink that reads "Joan Jones".

Head of Quality Assurance &
Regulatory Compliance

Welsh Blood Service
joan.jones3@wales.nhs.uk

Catherine Howell

A handwritten signature in black ink that reads "Catherine Howell".

Chief Nurse Patient Services

NHS Blood and Transplant
catherine.howell@nhsbt.nhs.uk

learnbloodtransfusion

e-learning for safe, effective and appropriate transfusion practice



Learn Cell Salvage www.e-lfh.org.uk/projects/learnbloodtransfusion

Learn Cell Salvage is designed to offer any learner the opportunity to gain a broad understanding of the principles of cell salvage and increase your awareness of a range of blood conservation of intraoperative cell salvage (ICS) and postoperative cell salvage (PCS).

This course is aimed primarily at doctors, nurses, operating department practitioners, cell salvage operators, clinical perfusionists, and clinical support workers.

One session split into four units:

Basic Blood Facts

Blood Conservation

Intraoperative Cell Salvage

Postoperative Cell Salvage (PCS)

LEARN CELL SALVAGE

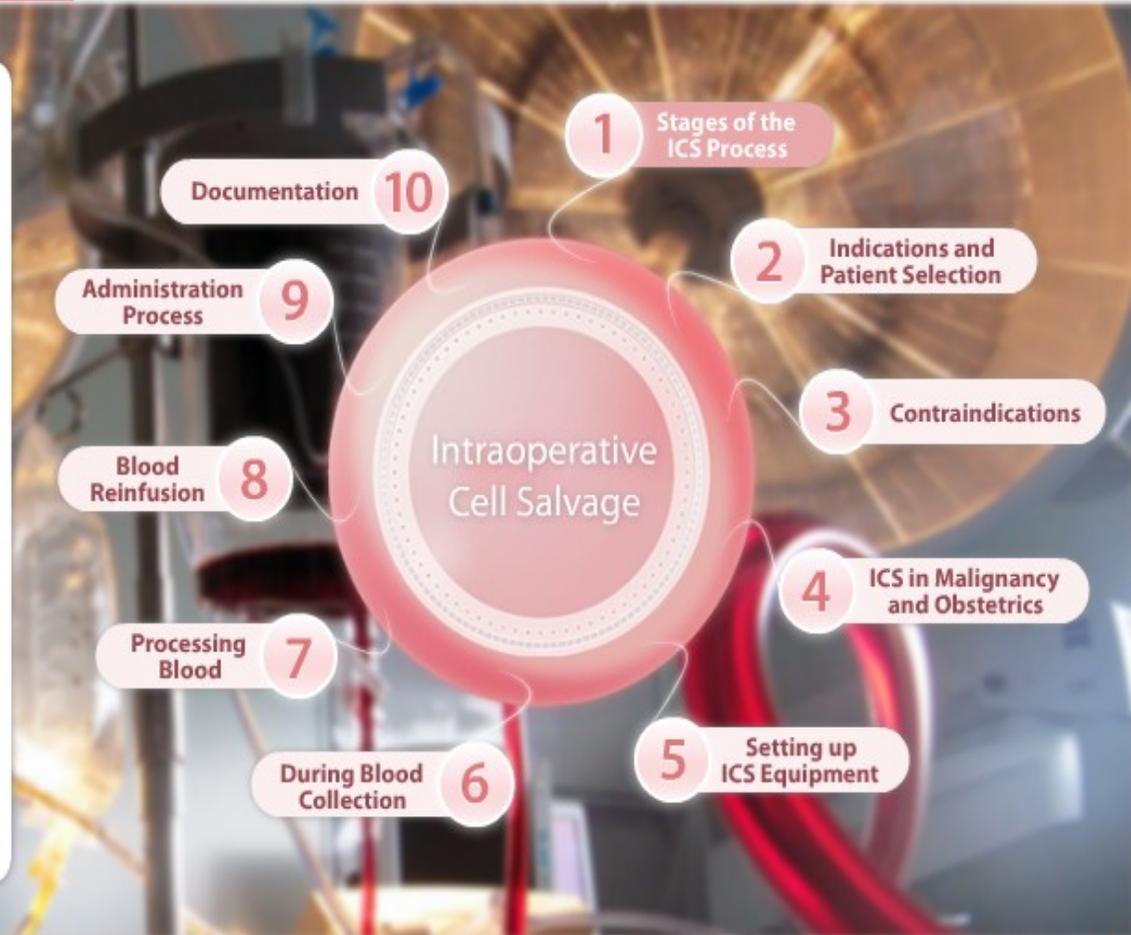
3.0

Intraoperative Cell Salvage Cont'd

By the end of this unit you should be able to:

- Describe the process that is occurring during blood collection
- Outline the factors to be considered in the decision to proceed to process collected blood
- Describe the process that is occurring during blood processing
- Describe the contents of the final ICS product.

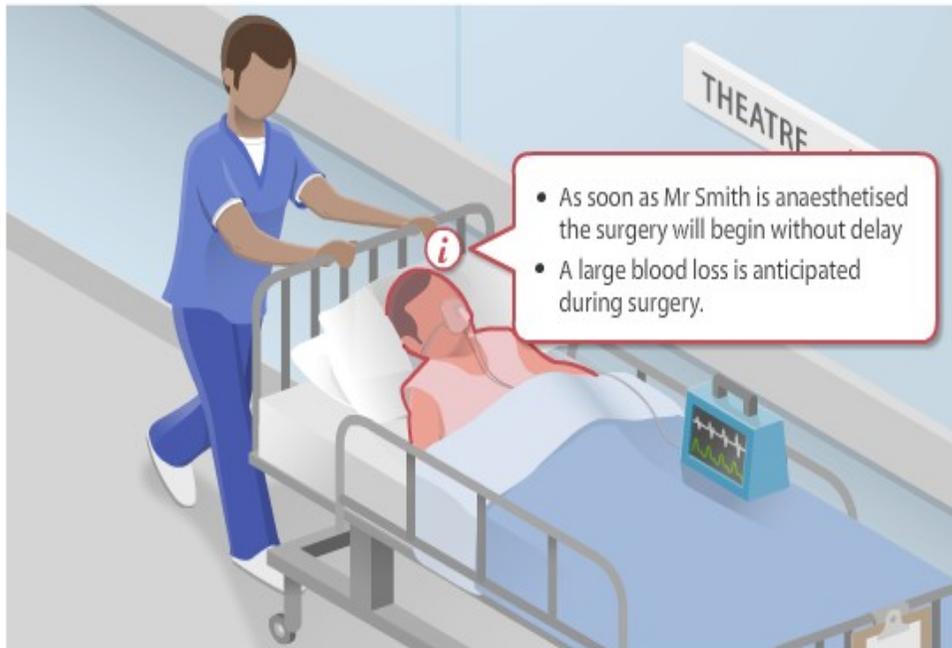
Click on the next button to continue.



LEARN CELL SALVAGE



Question 2 of 5 - Roll your mouse over the illustration to find out more information.



George Smith is a 67 year old male who is being transferred from accident and emergency direct to theatre for emergency repair of a ruptured abdominal aortic aneurysm.

continue

LEARN CELL SALVAGE



[Introduction](#)

[Unit One](#)

[Unit Two](#)

[Unit Three](#)

[Unit Four](#)

[Scenarios](#)

Assessment



Learn Cell Salvage: End of unit assessment

Question 4 of 8

Q4) Setting up for "Collect only" enables the decision to set up the processing equipment to be made based on actual blood loss.

select

a True

b False



Intra-operative cell salvage: a fresh look at the indications and contraindications

- In the past, the AABB (formerly known as the American Association of Blood Banks) has recommended the following general indications for cell salvage use: the anticipated blood loss is 20% or more of the patient's estimated blood volume.
- These recommendations are derived from a cost comparison between administering allogeneic blood and use of cell salvage. More recently, the cost of administering allogeneic blood has grown, which changes this economic relationship. At the same time, the medical community has gained a much better understanding of the expense associated with cell salvage. For this reason, implementation of cell salvage should be considered when much smaller amounts of blood loss are anticipated.

***Blood Transfus.* 2011 April; 9(2): 139–147.**