The Queen Elizabeth Hospital NHS
King's Lynn
NHS Foundation Trust

"No blood, thank you".
Are You Ready for Bloodless Surgery?

Claire L J Atterbury
CNS Haematology and Transfusion Medicine
King's Lynn, Norfolk

Where were we? What year?

'The mass of literature on the subject of Blood Transfusions accumulated during the past 25 years is so great, and most of it so readily available, that one shows lack of temerity at least to attempt a discussion of this subject before this audience. The transfusion of blood may be a life-saving procedure under certain circumstances. It may be a necessary supportive measure under others, but it is too often undertaken when the doctor can think of nothing else to do after all other therapy has failed. My objective today is to discuss briefly the common surgical and medical conditions for which transfusion of blood is indicated in which we can obtain good physiological results and to point out those conditions in which it is little more than a gesture done as it were to satisfy the urge to do something.'

NEJM

The New England
Journal of Medicine

VOLUME 215 SEPTEMBER 3, 1936 NUMBER 10

The Massachusetts Medical Society

SECTION OF MEDICINE

Lower Section Room, Municipal Auditorium, Springfield, Tuesday, June 9, 1936, 2 p. m.

PRESIDING:
Dr. William D. Smith, Boston, Chairman.
Dr. Laurence B. Ellis, Boston, Secretary.

CHAIRMAN SMITH: Will the meeting please come to order.

The first duty of the Section is the selection of the Chairman and the Secretary for the coming year, and, in accordance with the usual custom, the Chair will appoint as the Nominating Committee to suggest names Dr. Dwight O'Hara, Chairman, Dr. George R. Minot and Dr. Chester M. Jones. They will report later and abide the pleasure of the Section.

I do not see Dr. Hamilton here. Apparently she is delayed, so we will pass on to the second paper. To those of us who have had our moments of indecision whether to transfuse or not to transfuse in some of our medical problems, Dr. Bock's paper should be of interest. His subject is "The Use and Abuse of Blood Transfusions."

THE USE AND ABUSE OF BLOOD TRANSFUSIONS*

BY ARLIE V. BOCK, M.D.†

THE mass of literature on the subject of blood transfusions accumulated during the past twenty-five years is so great and most of it so readily available that one shows lack of temerity at least to attempt a discussion of the subject before this audience. The transfusion of blood may be a life-saving procedure under certain circumstances, it may be a necessary supportive measure under others, but it is too often undertaken when the doctor can think of nothing else to do after all other therapy has failed. My objective today is to discuss briefly the common surgical and medical conditions for which transfusion of blood is indicated, in which we can expect good physiological results, and to point out those conditions in which it is little more than a gesture, done, as it were, to satisfy the urge to do something.

SURGICAL INDICATIONS

1. *Shock.* Many theories of the cause of primary and secondary shock have been offered by able investigators, most of them recently reviewed briefly by Blalock.[1] Because of the complexity of the events no theory yet proposed can be considered the final answer as to the etiology of shock. We know that if treatment of the condition is to be successful it must accomplish two things, restoration of diminished blood volume and elevation of low blood pressure. Blood volume may be reduced by gross hemorrhage or it may be reduced by blood lost in the periphery of the body, as suggested by Freeman,[2] or by extravasation of serum through damaged capillaries. If hemorrhage has occurred, transfusion of blood, together with such supportive measures as heat, is the immediate indication. No other therapy is so successful. In shock without much or any hemorrhage, 6 per cent gum acacia in normal saline may be just as effective as blood, and has the advantage of greater availability. Repeated transfusions of blood or infusions of acacia may be necessary but, are usually not, if no delay has occurred in the first instance. Acacia may be used as a supportive measure until transfusion can be arranged. Prolongation of the shock state results in tissue asphyxia, capillary damage, petechial hemorrhages, and rapid change in general to an irreversible state.

One of the common accompaniments of shock is dehydration, a state associated with loss of water, base, chloride and increase of nonprotein nitrogen. When such a state exists, transfusion alone is not adequate therapy but normal salt solution, often in large quantities, should be administered intravenously, or it may be given in eight-ounce quantities by rectum every half hour. When facilities permit, serum chloride

*Read at the Annual Meeting of the Massachusetts Medical Society, Section of Medicine, Springfield, June 9, 1936.

†Bock, Arlie V.—Physician, Massachusetts General Hospital. For record and address of author see "This Week's Issue," page 469.

And where are we?

'The anaemia as I mentioned in a previous letter is chronic anaemia which can not be corrected without blood transfusion and I leave it to you to organise that pre-operatively. I think once you have done that you will be safe to go ahead with surgery'.

GP to Ortho Consultant January *2013*

It's all in the preparation

- Pre-assessment not pre-admission clerking in a timely fashion
- Take a bleeding history
- Careful examination and review of co-morbidities
- Suitable blood tests – does one size fit all?
- Review of all the evidence – by pre-assessment team (what would keep them in?)
- Correct what can be corrected – have a clear plan in the notes
- Consider a bleeding plan – what will you do if they bleed?
- Not ideal with a chance of improvement? Bounce back to the GP for onward referral (but tell them what needs doing and by whom)

Intraoperative Management

- Multimodality approach
- Surgical techniques to minimise blood loss
  - Meticulous Haemostasis
  - Minimise duration of surgery?
  - Patient positioning?
  - Staged surgery?
- Haemostatic instruments
- Minimally invasive approaches
- Use of drugs such as Tranexamic Acid, Fibrin Glue etc etc
- Maintain normothermia
- Intraoperative Cell Salvage

Post-operative Management

- Close monitoring for any blood loss
- Early reporting and intervention
- Return to Theatre to stop bleeding?
- Treat shock energetically
- Consider intravenous iron of needed
- Oxygen and fluids – resuscitate

It's a team effort

- Two or more draught animals harnessed together
- Set of players forming one side in a game
- Set of persons working together

Remember - No blood needs planning (and nerve!)

- Plan, plan, plan
- Use team work (include the patient, their family and the GP)
- Don't go until the patient is optimised (you can suspend them from the list)
- Optimise if possible and necessary before discharge