MEDTECH UNLOCKED

CROWN TOWERS
PERTH
19-21 May 2026

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Host State Partners

BUSINESS EVENTS PERTH

AusBiotech
AusMedtech 2026

MEDTECH — UNLOCKED

CROWN TOWERS PERTH
19-21 May 2026

The story behind a breakthrough Stentgraft

A Fireside chat

Prof Shirley Jansen talks with Em Prof Michael Lawrence Brown AO and David Hartley AM innovators

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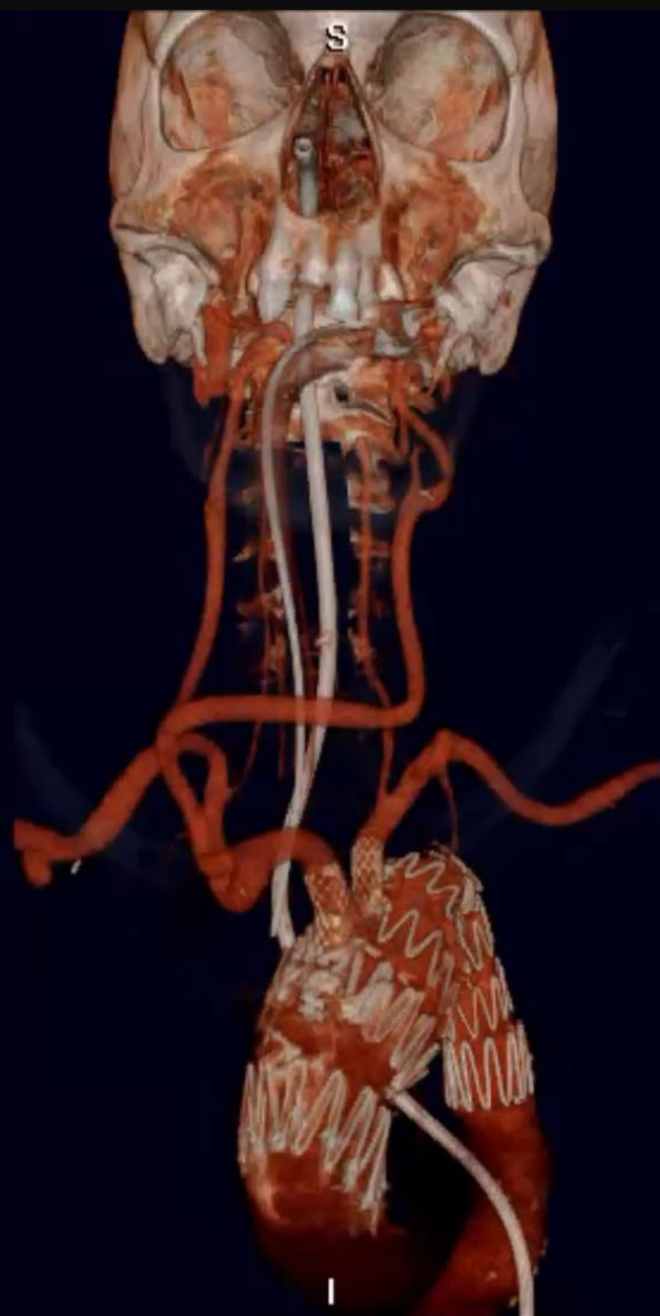
Host State Partners

BUSINESS EVENTS PERTH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Vitrea®
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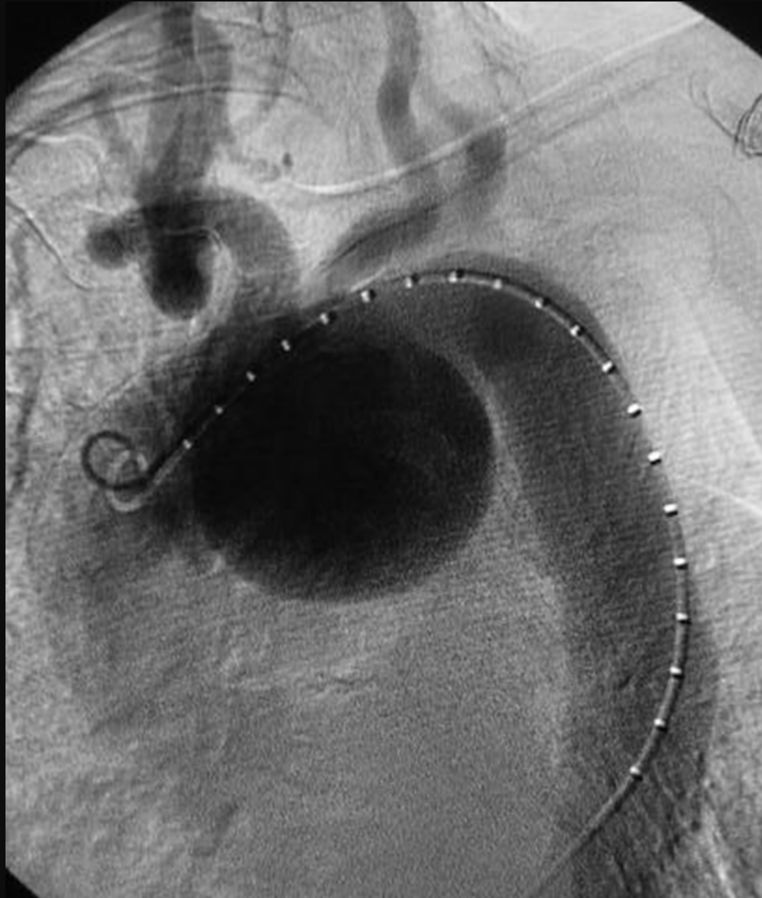
Segmented

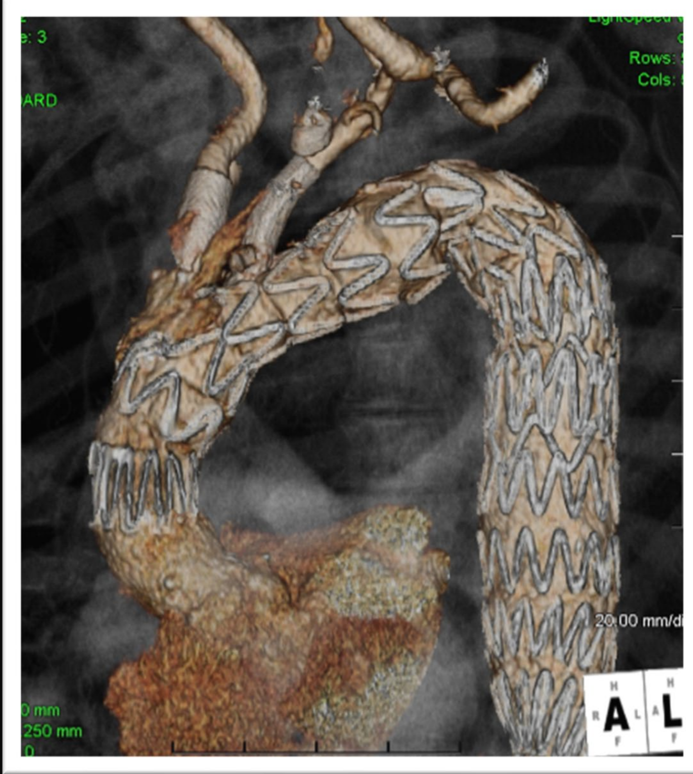
Pre deployment

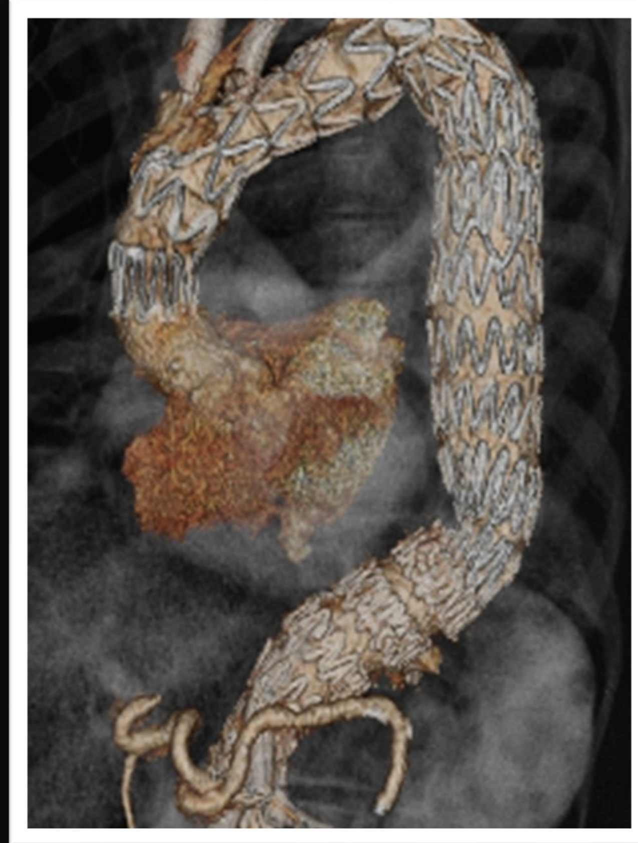


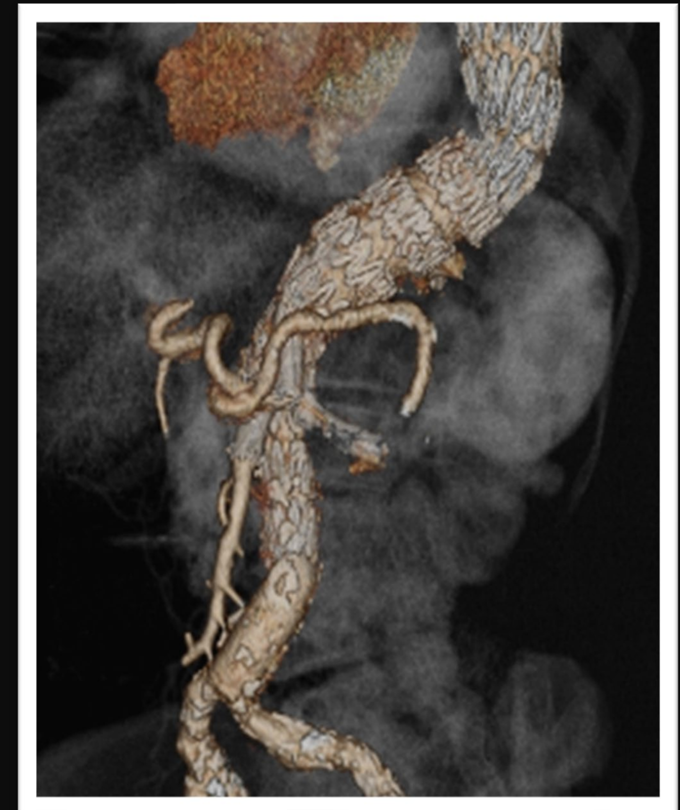
Post deployment

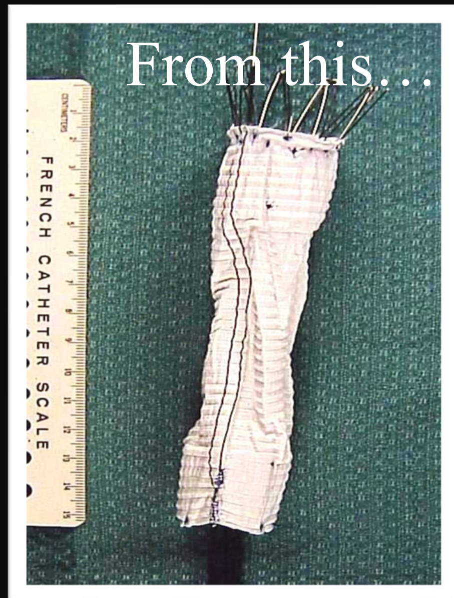
Images Courtesy
Of
Dr John Anderson

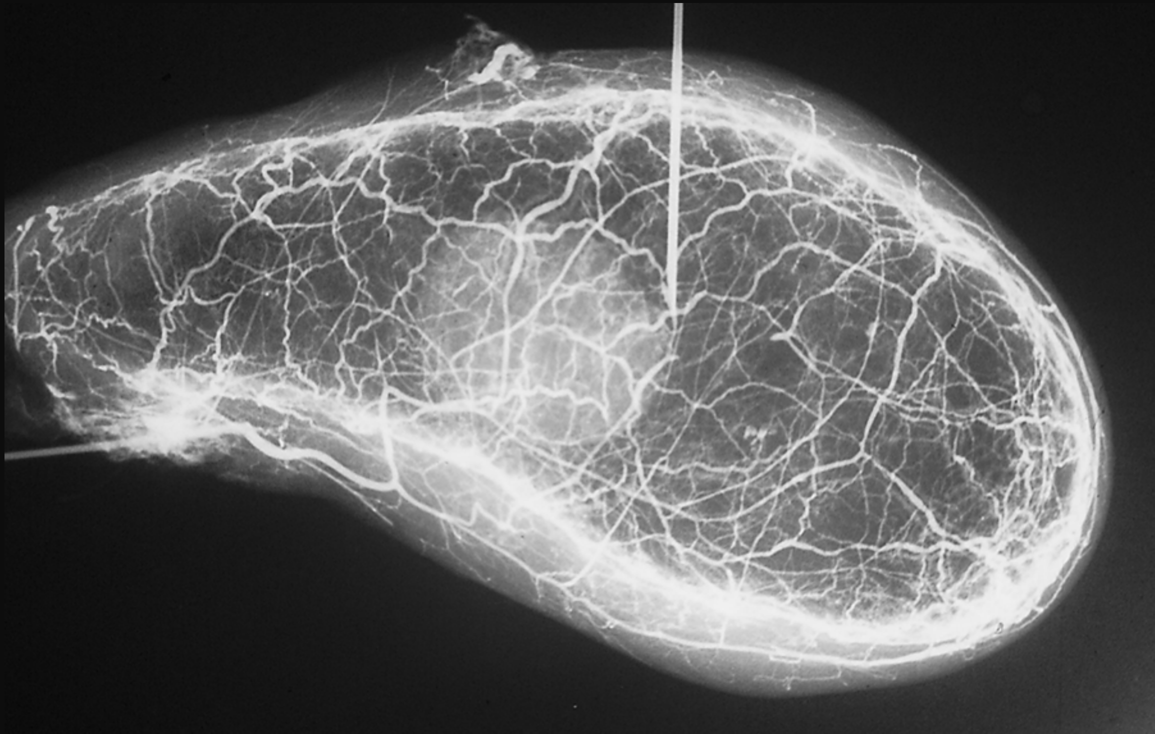
Total aortic coverage over 10 years

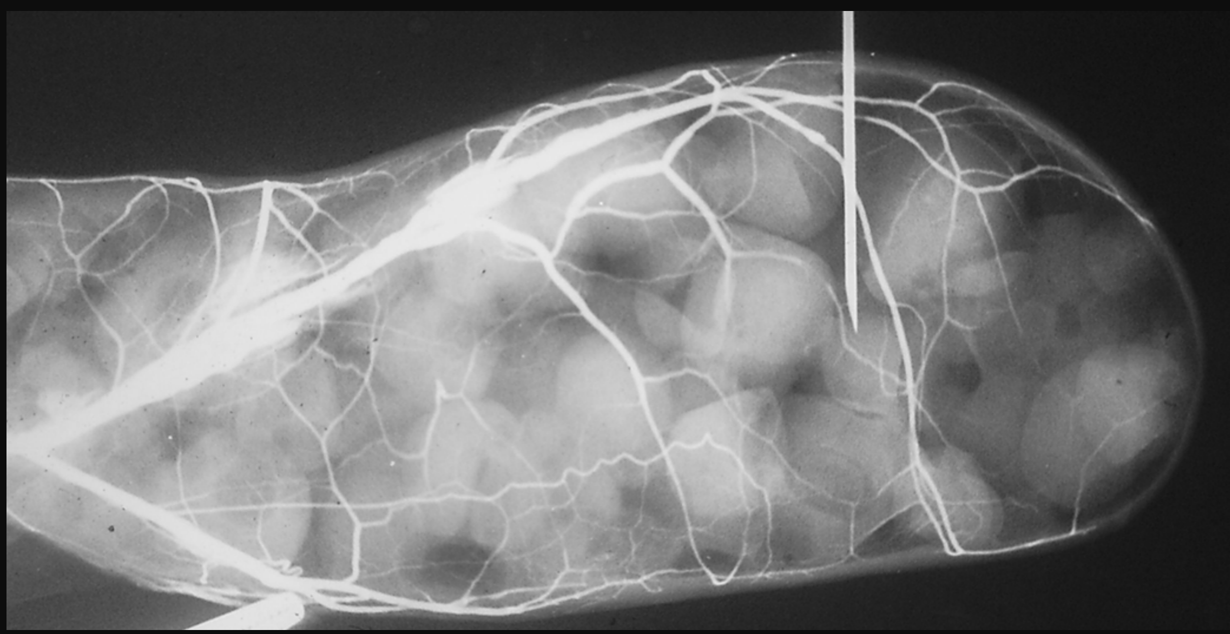


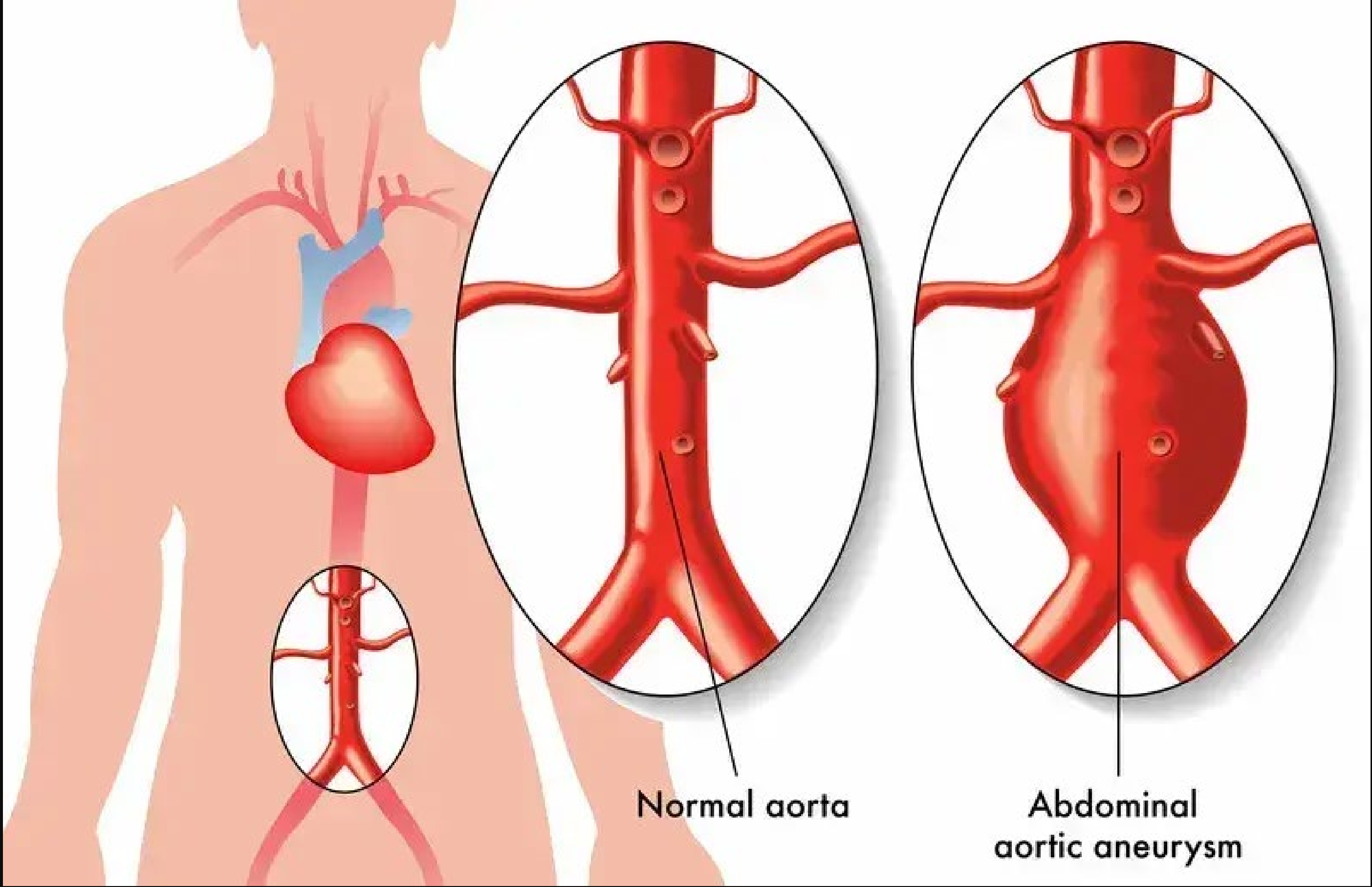






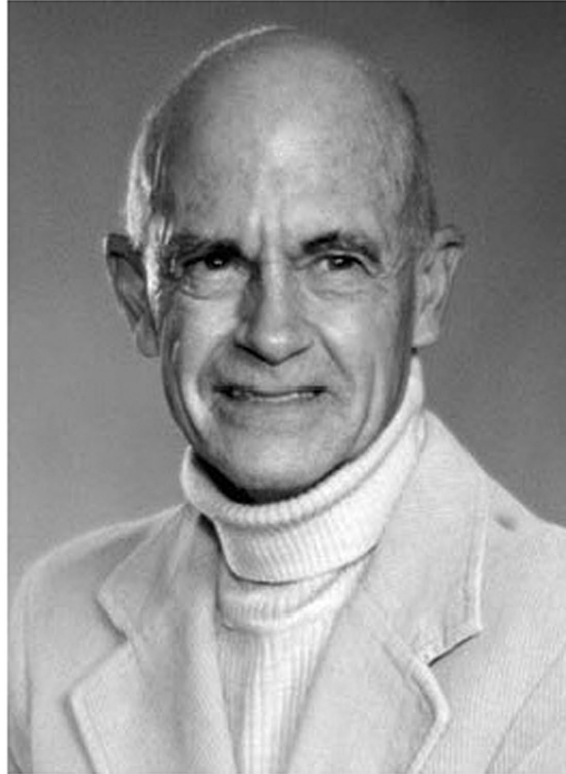





Normal aorta
Abdominal
aortic aneurysm

Open repair by tube graft

DEBAKEY
doyen of cardiovascular surgery



Charles T. Dotter

1920 – 1985

Father of Interventional Radiology

DOTTER INTERVENTIONAL INSTITUTE

FORTIETH ANNIVERSARY OF ANGIOPLASTY

At this site on January 16, 1964 Charles T. Dotter, M.D. performed the world's first percutaneous transluminal angioplasty. Dr. Dotter, recognized as the "Father of Interventional Radiology," made many seminal contributions to the field of Interventional Radiology and pioneered the concept of "surgery without a scalpel" with his statement in 1963 that "... it should be evident that the angiographic catheter can be more than a tool for passive means for diagnostic observations: used with imagination it can become an important surgical instrument."

Initially, not accepted in the United States, angioplasty was readily adopted in Europe. There, the term "Dottering" an arterial stenosis became commonplace. Transluminal angioplasty has indeed withstood the test of time. Today, on the fortieth anniversary of the first angioplasty, this procedure is used extensively throughout the world. Angioplasty has become widely adopted by many medical specialties and its applications extended to virtually every major artery and other tubular structures in the human body. For creating and developing the concept of percutaneous transluminal angioplasty, Charles Dotter was nominated for the Nobel Prize in medicine in 1978.

Dr. Dotter was appointed the first Chairman of the Department of Radiology at the University of Oregon Medical School in 1952 and remained in that position until his death 33 years later. In 1989, on the 25th anniversary of percutaneous transluminal angioplasty, OHSU accepted a proposal to establish the Dotter Interventional Institute to both honor Charles Dotter and promote the specialty of Interventional Medicine. The Dotter Interventional Institute was established in 1990 with generous support from Mr. William A. Cook and subsequently has developed into one of the world's leading programs in image guided interventional therapy.

"Surgery without a scalpel"

1964

Seldinger 1953

a Swedish radiologist, invented the technique of inserting a wire, that would act like a rail, into a major artery via a needle

Fogarty 1961

developed a balloon on a catheter to extract clots from legs arteries without a wire rail.

Dotter 1964

an American vascular radiologist, invented a technique to dilate narrowed arteries in the legs with rods and then a fixed diameter balloon passed on the wire (guide)

Greuntzig 1977

a German radiologist, a student of Dotter and Eberhard Zeitler in Switzerland, used a version of the angioplasty technique modified by the American Judkins, on the heart arteries in the Cleveland Clinic USA

Palmaz 1980's

an Argentinian radiologist, developed a slotted steel tube to fit on a balloon that when expanded supported a dilated artery as a stent. He further developed this with the American Richard Schatz to create the Palmaz-Schatz stent for the heart

The first vascular grafts were homografts. Rejections led to the use of textiles and many were homemade by surgeons using Dacron (shirt material) in the 1950’s

Dr Sam Mellick (Brisbane) persuaded his wife to make his vascular Dacron grafts on her sewing machine
circa 1956

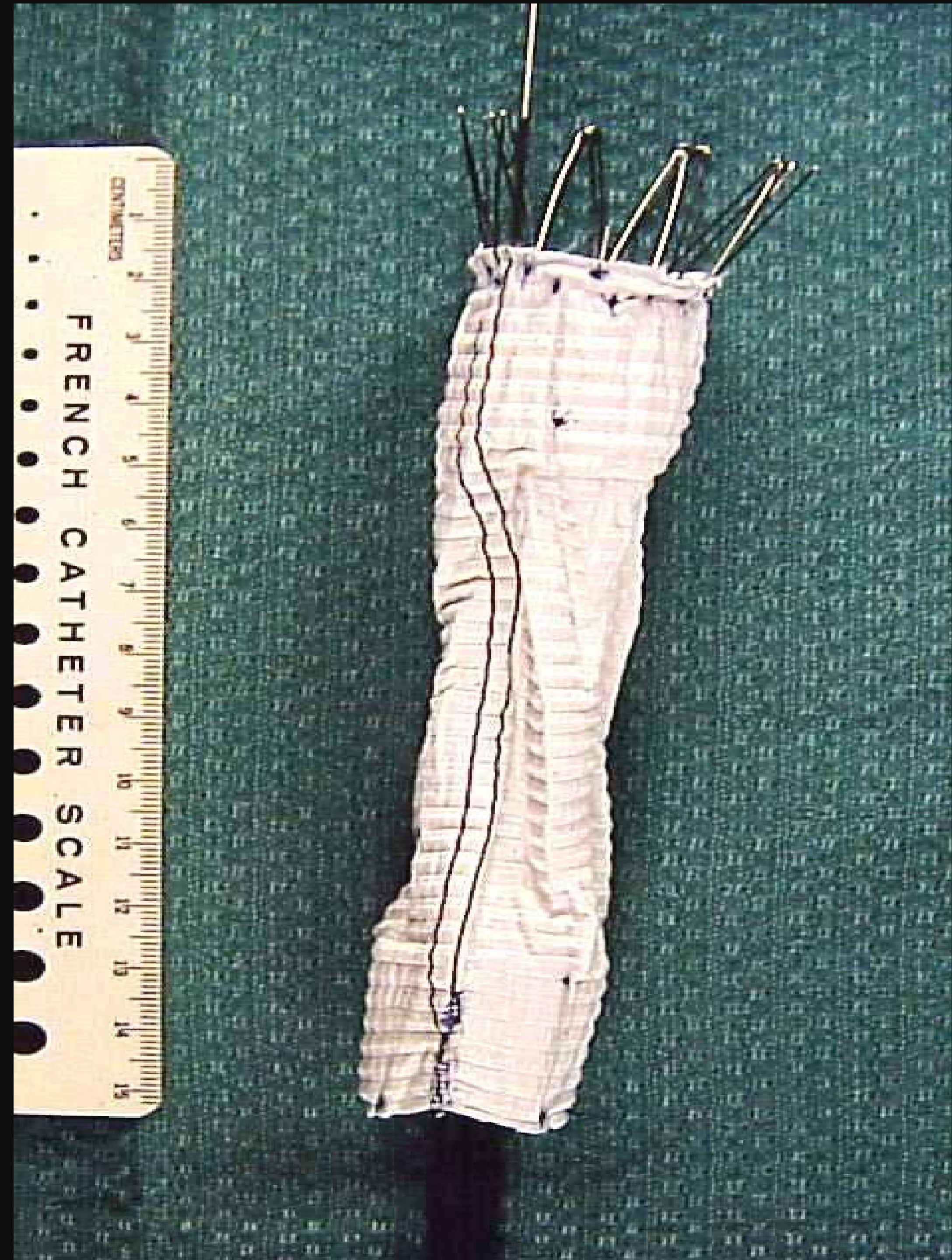
ROYAL PERTH HOSPITAL

ENDOVASCULAR UNIT

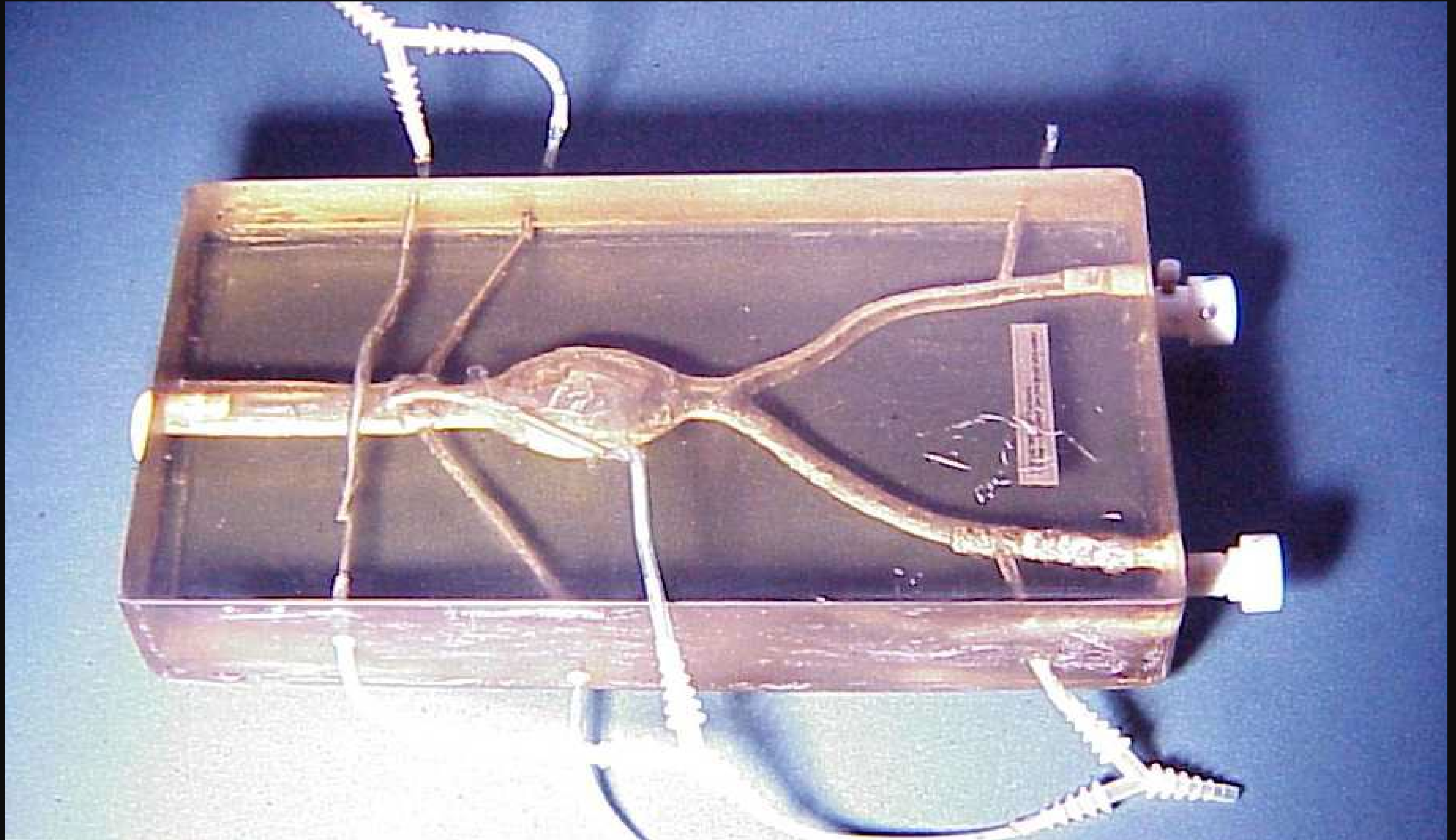
Departments of Medical Imaging & Vascular Surgery

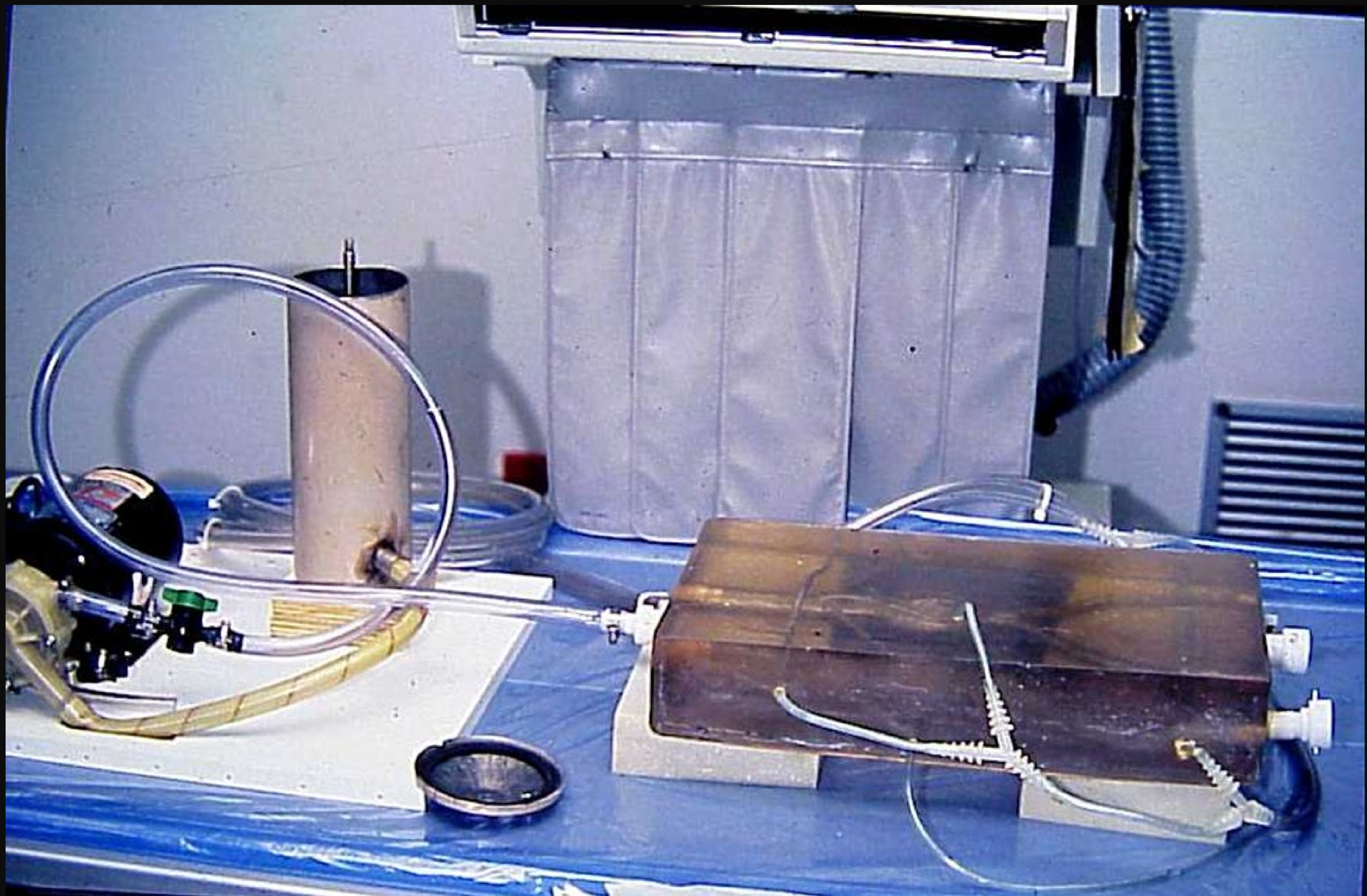
1993

TUBE GRAFT



“Mr Walker”





ABSTRACT:

Purpose: To develop a reliable endoluminal graft system that would enable the deployment of a bifurcate graft for infrarenal abdominal aortic aneurysms.

Methods: A life-size plastic model was made of an abdominal aneurysm and the iliac arteries, with a 50 mm infrarenal abdominal aortic aneurysm. This model was used to develop and trial self expanding graft systems, based on Gianturco "Z" stents with a woven Dacron graft. The developed bifurcate system involves a trouser graft with one long leg and one short. This graft system is delivered through one femoral artery with deployment of the proximal aortic end infrarenally and the longer trouser leg within the ipsilateral common iliac artery.

The short trouser leg is left hanging free within the distal end of the aneurysm cavity, just above the bifurcation; held open by a self expanding stent, it is cannulated from the contralateral femoral artery with a guidewire. A simple straight self expanding stent is then positioned from within this short trouser leg down and into its common iliac artery and deployed, effectively creating an extension to the short leg.

Results: Six bifurcate grafts have been inserted and all deployed satisfactorily without complication. The initial bifurcate system was inserted on the 26/07/94.

Altogether 14 endoluminal grafts have been inserted in 13 patients. The initial experience was with straight grafts. Two failed to deploy and had to be converted to open surgery and survived; two grafts deployed satisfactorily, but failed to seal the aneurysm - one subsequently ruptured and died and the other was later successfully sealed with an intraluminal extension. The three remaining straight grafts were inserted satisfactorily without complication.

Conclusion: The life size model, that could be trialled in the real life setting, provided training for the operating team and was essential to the development and satisfactory deployment of the bifurcate system. Accuracy was critical for graft design and high quality imaging is required. A reliable bifurcate system will allow for the treatment of all infrarenal abdominal aortic aneurysms which have a proximal neck.

INTERNATIONAL ENDOVASCULAR SYMPOSIUM '97

International Endovascular Symposium '94

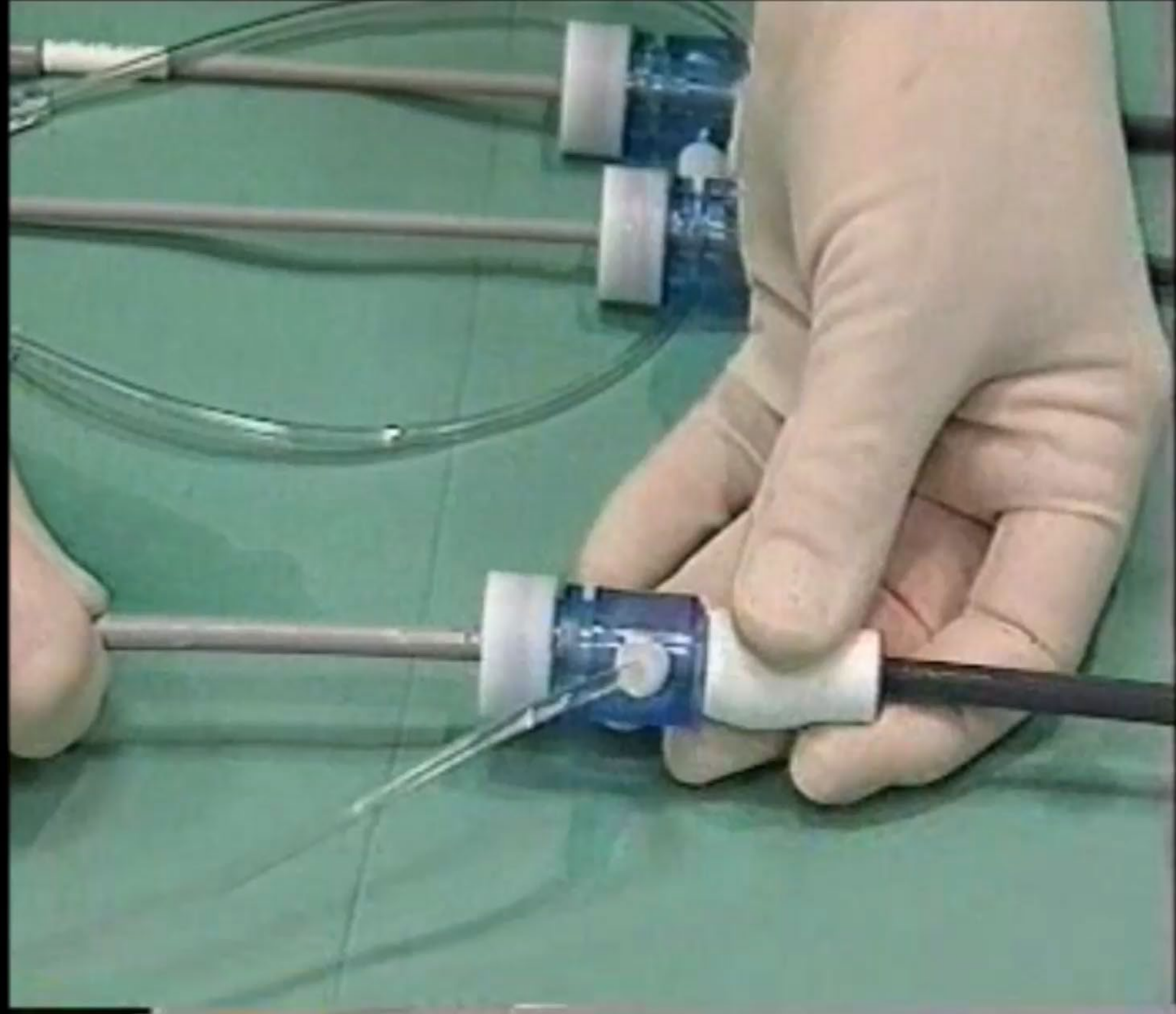
Sydney, Australia

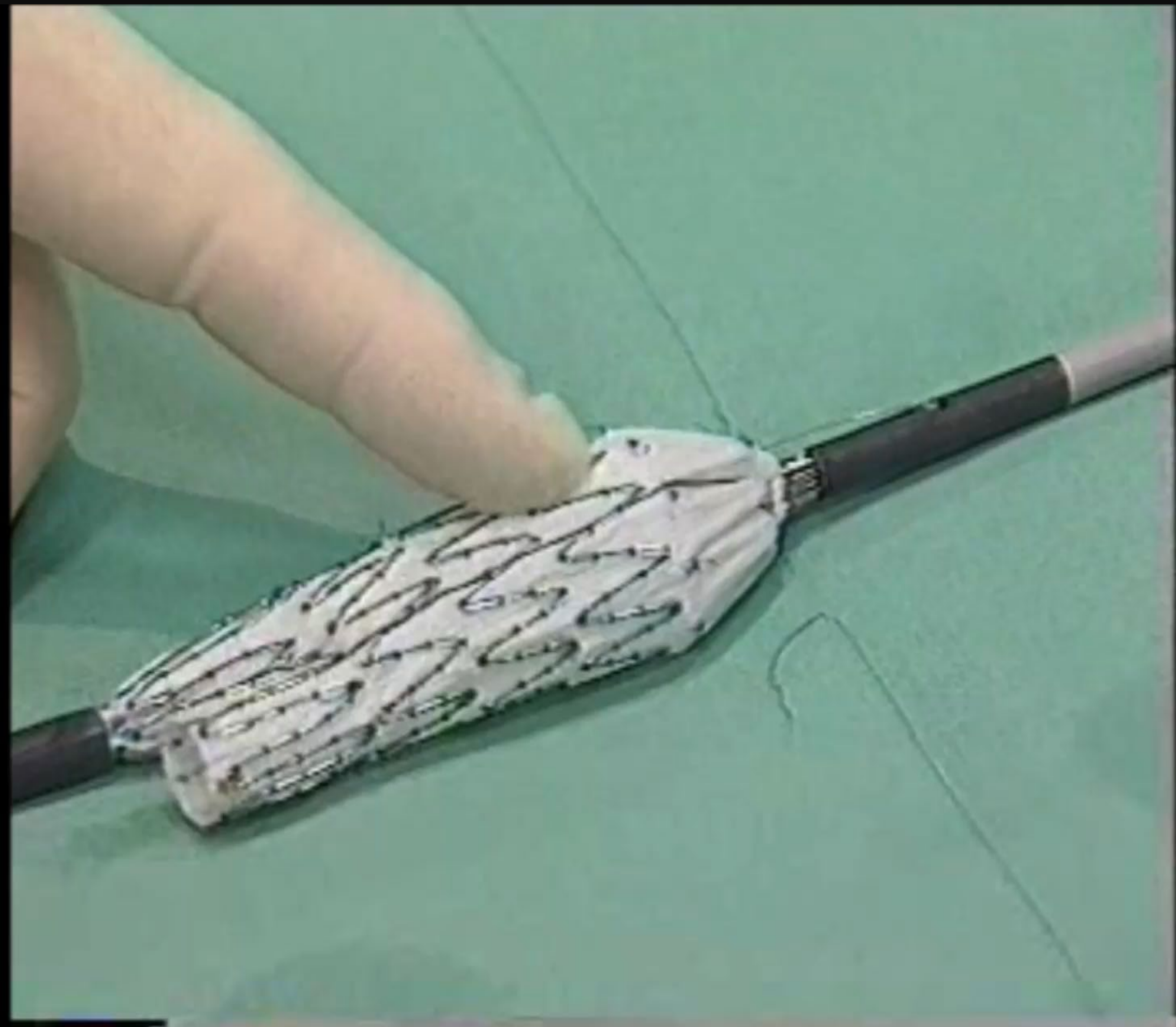
14-16 December 1994

BOOK OF PROCEEDINGS

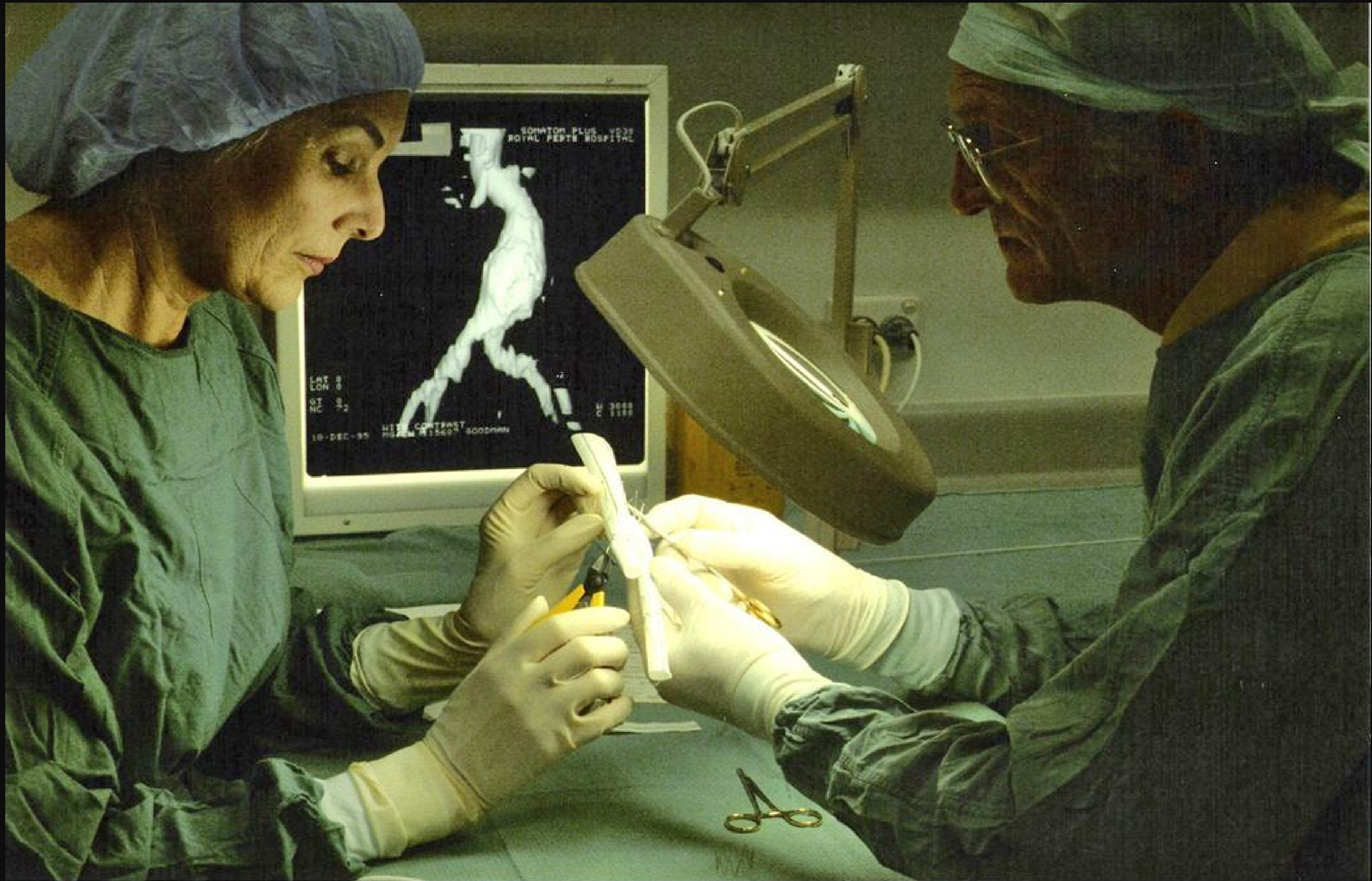
PERIPHERAL AND
CORONARY INTERVENTIONS
FEATURING LIVE CASE
DEMONSTRATIONS & WORKSHOPS

IES'97





Sue Morris sewing with David Hartley



COOK AUSTRALIA'S

H&L-B ENDOSTENT™ NEWS

Published by Cook Australia A Cook Group Company April, 1998

A publication bringing you the latest developments in endoluminal graft stenting.

International guests visit Royal Perth Hospital for H&L-B EndoStent™ workshop

COOK AUSTRALIA, working with the Department of Vascular Services at Royal Perth Hospital, was privileged to host a group of overseas guests who participated in a week of discussion and live case demonstrations.

The clinicians involved were:

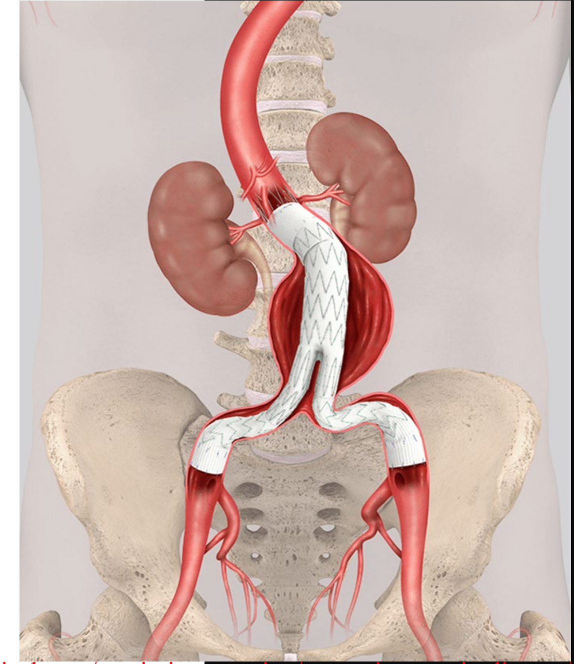
- Dr Krassi Ivancev — Malmo, Sweden
- Dr Tim Chuter — San Francisco, USA
- Dr Roy Greenberg — Rochester, USA
- Dr Bengt Lindblad — Malmo, Sweden
- Professor Brian Hopkinson — Nottingham, UK
- Dr Simon Whitaker — Nottingham, UK

The official opening of COOK AUSTRALIA's research and development facility at Royal Perth Hospital From left to right: Mr Geoff Reeves, Managing Director, COOK AUSTRALIA; Dr Michael Lawrence-Brown, Royal Perth Hospital; Mr David Hartley, COOK R&D WA; Dr Tim Chuter, San Francisco, USA; Dr Krassi Ivancev, Malmo, Sweden; Dr Simon Whitaker, Nottingham, UK; Professor Brian Hopkinson, Nottingham , UK

BioMidwest

Cook Medical's Zenith Endograft Captures Leading Market Share Position in Endovascular Aortic Repair Global Market

November 15, 2007 | 1 min read

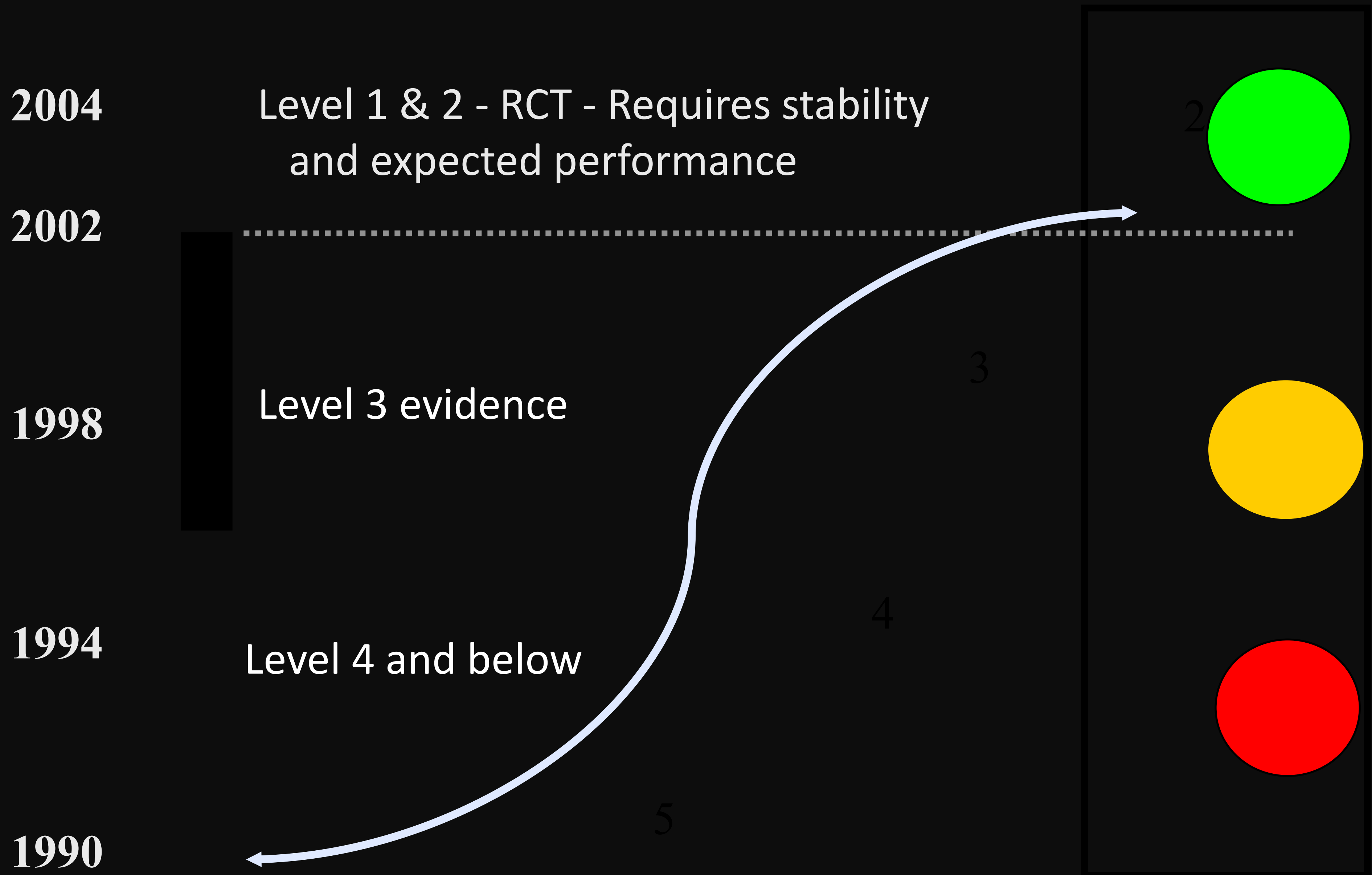


https://www.cookmedical.com/aortic-intervention/managing-aortic-disease/

BLOOMINGTON, Ind.--(BUSINESS WIRE)--Cook Medical today announced that its Aortic Intervention strategic business unit has captured more than 40 percent of the world market share, a leading global position in the endovascular aortic repair (EVAR) market. Through the rapid adoption of its advanced Zenith Endovascular Graft System designed to treat abdominal aortic aneurysms (AAA), the company has gained momentum as physicians, hospitals and other medical institutions have increasingly chosen Zenith as an effective, minimally invasive means of treating potentially life-threatening AAAs.

https://www.biospace.com/cook-medical-s-zenith-endograft-captures-leading-market-share-position-in-endovascular-aortic-repair-global-market

Ethics of Device Development and a RCT Proof of Concept



NECK LENGTH VS. SEAL ZONE

Infrarenal neck length indication (mm)

0
5
10
15
20

7 MM
10 MM
15 MM

30 mm
average
seal zone
created*

4 MM

Standard EVAR Grafts
Neck length = Seal zone

Zenith® Fenestrated Graft
Seal zone > Neck length

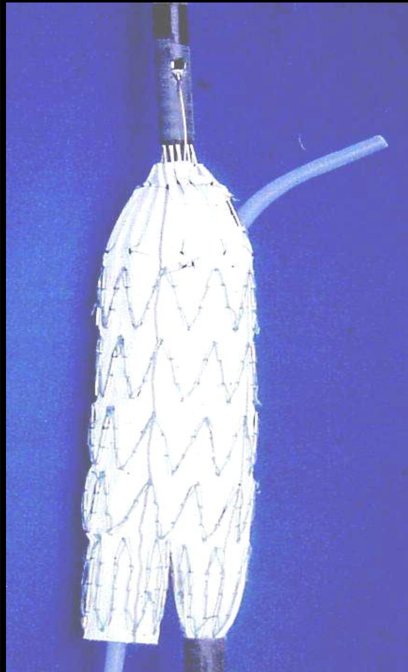
Zenith Fenestrated AAA Endovacular graft | Cook Medical

First human fenestrated graft 1998

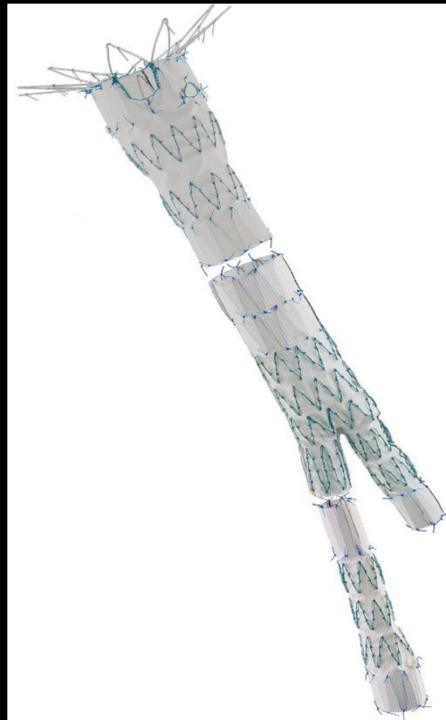
Dr John Anderson

Adelaide July 1998

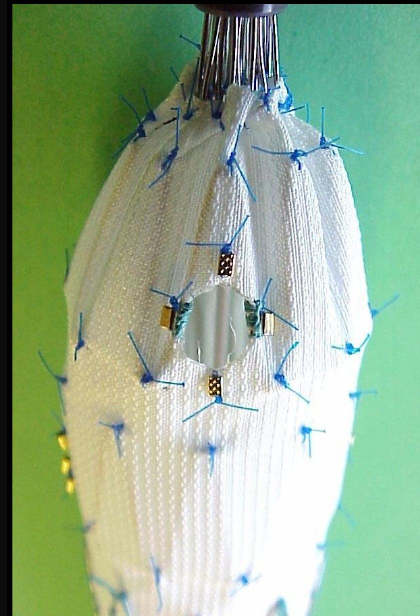
Composite Graft Suitable for Fenestration



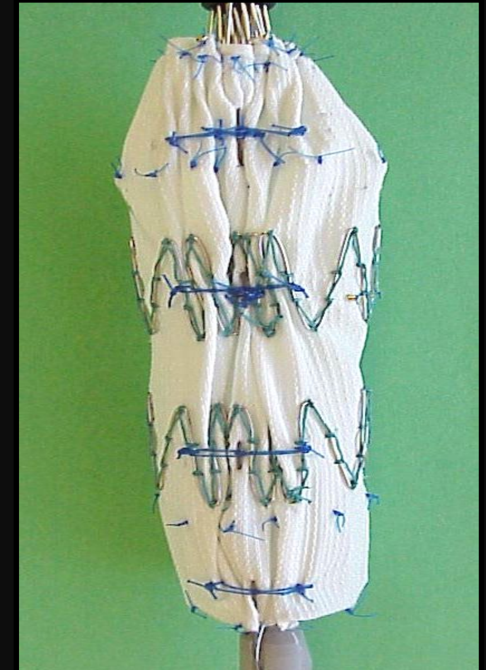
1st generation uni-body



2nd generation composite



Fenestration



Reducing ties

22 MARCH 2021

Cook Medical receives FDA Breakthrough Device Designation for Zenith® Fenestrated+ Endovascular Graft

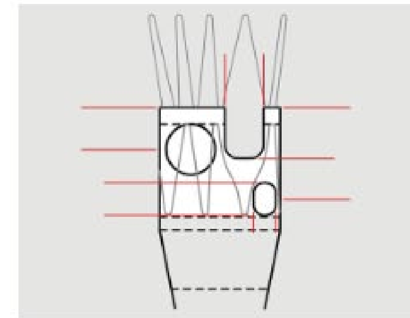
Patient Specific

Accommodate each patient's unique anatomy for a personalized fit.

Large Fenestration

Scallop

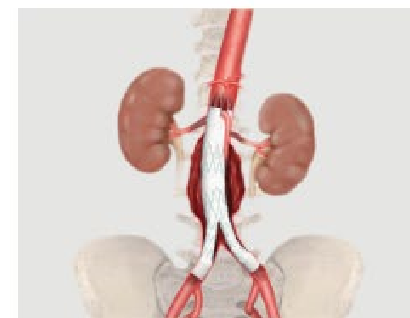
Small Fenestration



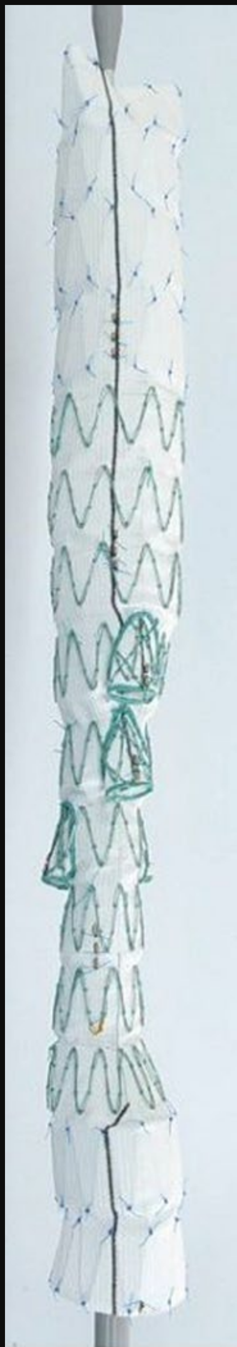
Proximal Body
Diameters 24-36 mm

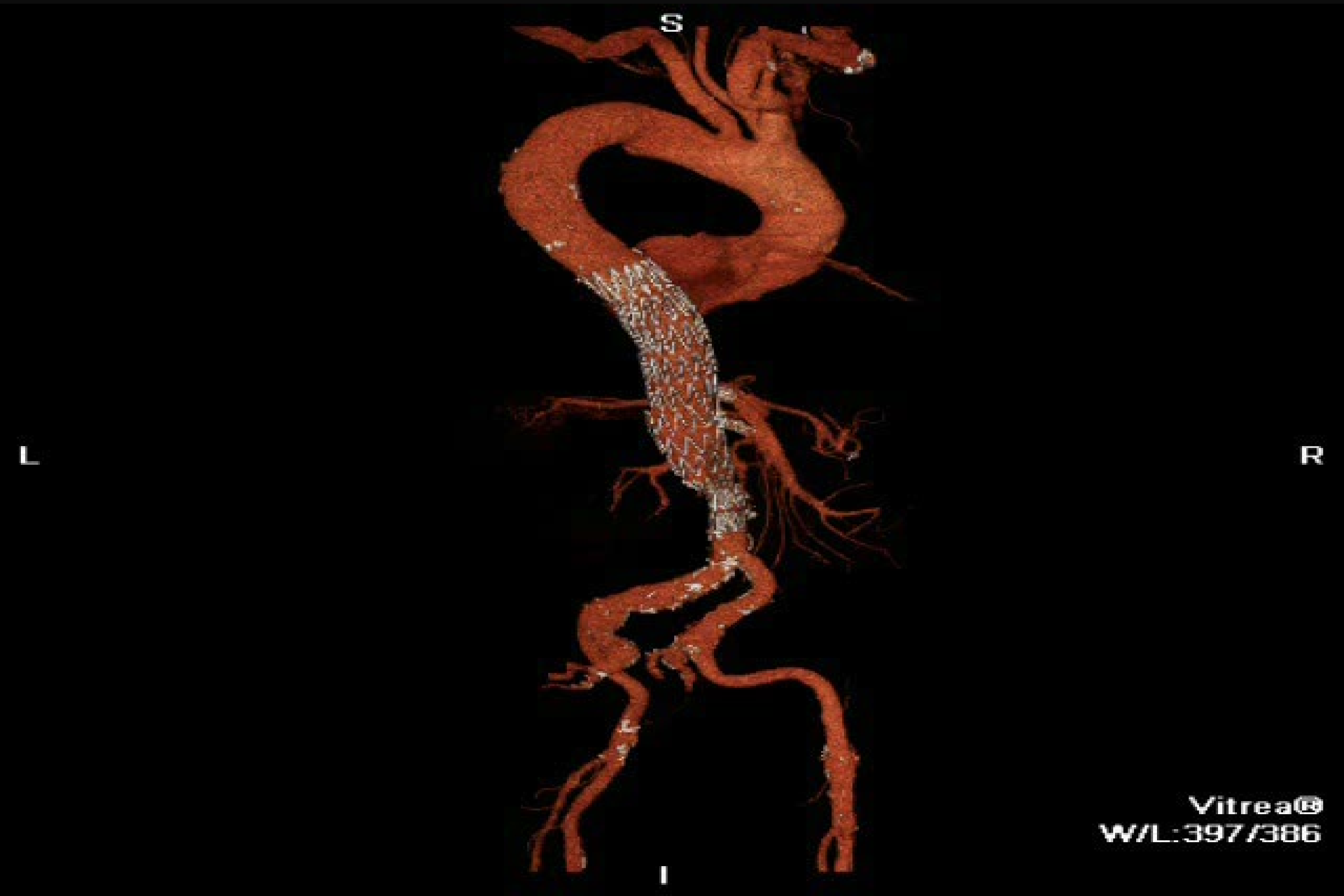
Distal Bifurcated
Body Grafts

Spiral-Z® Iliac Leg
Diameters 9-24 mm



https://www.cookmedical.com/aortic-intervention/zenith-home/zenith-fenestrated-aaa-endovacular-graft/

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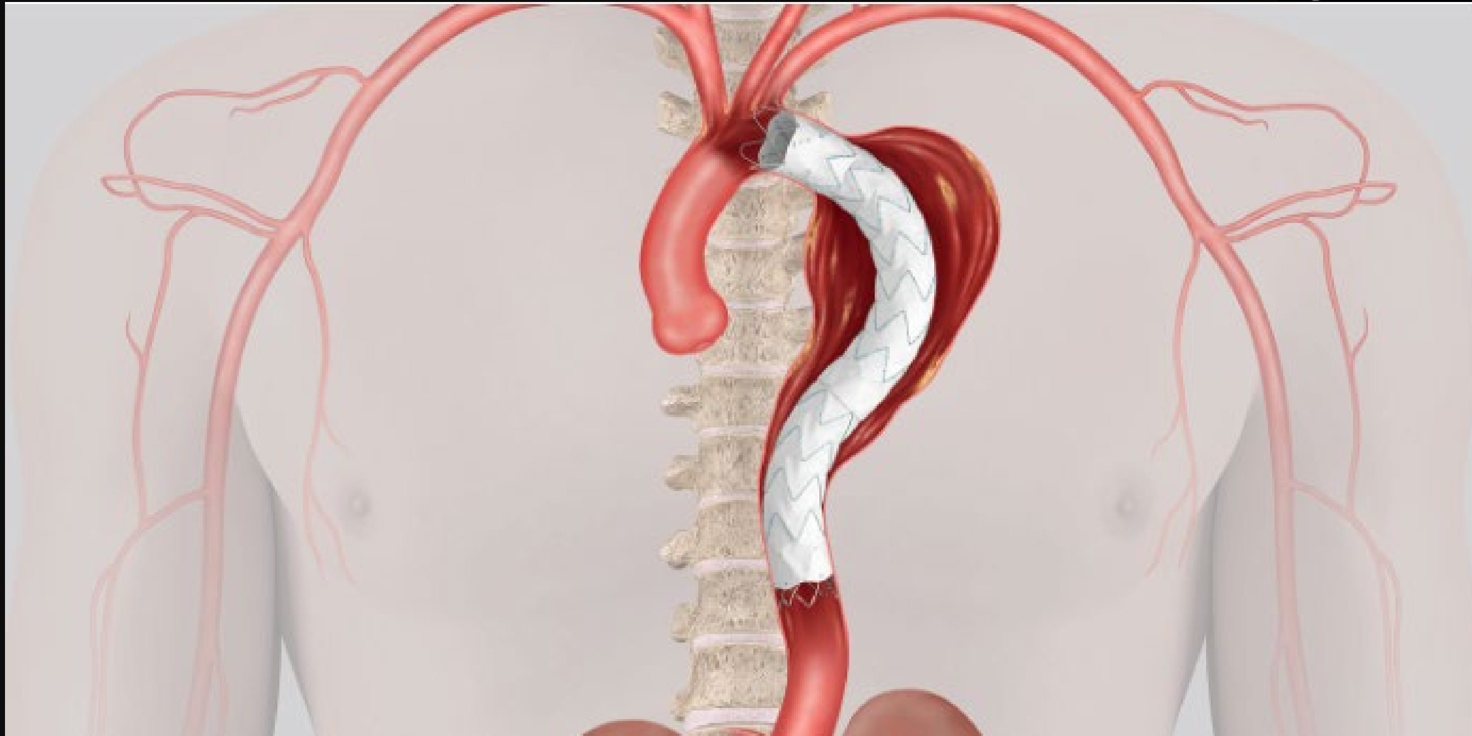
Vitrea®
W/L:397/386

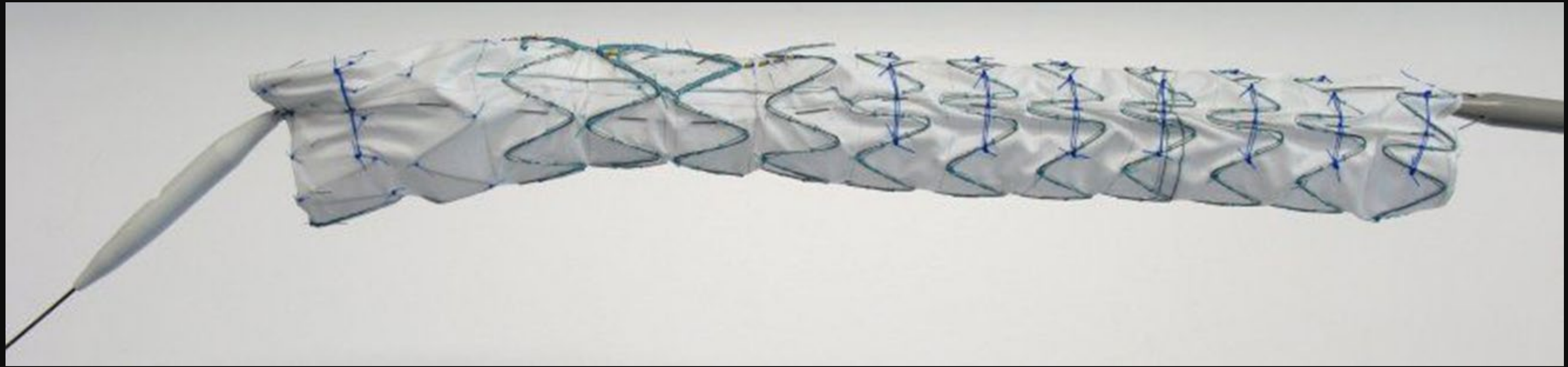
Zenith® Iliac Branch

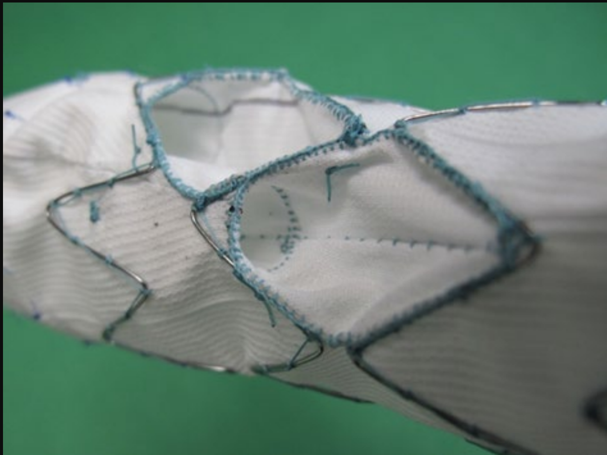
https://www.philips.com.sg/healthcare/product/NCVC853/smartct-angio-imaging-technology

Zenith Alpha® 2
Thoracic
Endovascular Graft



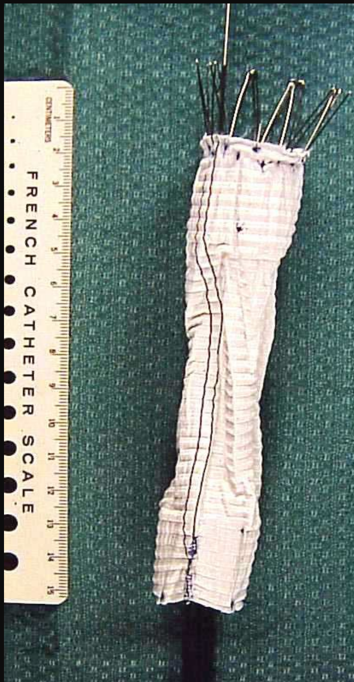
https://www.cookmedical.com/zenith-deploy/#!thoracic/proximal/flush-device

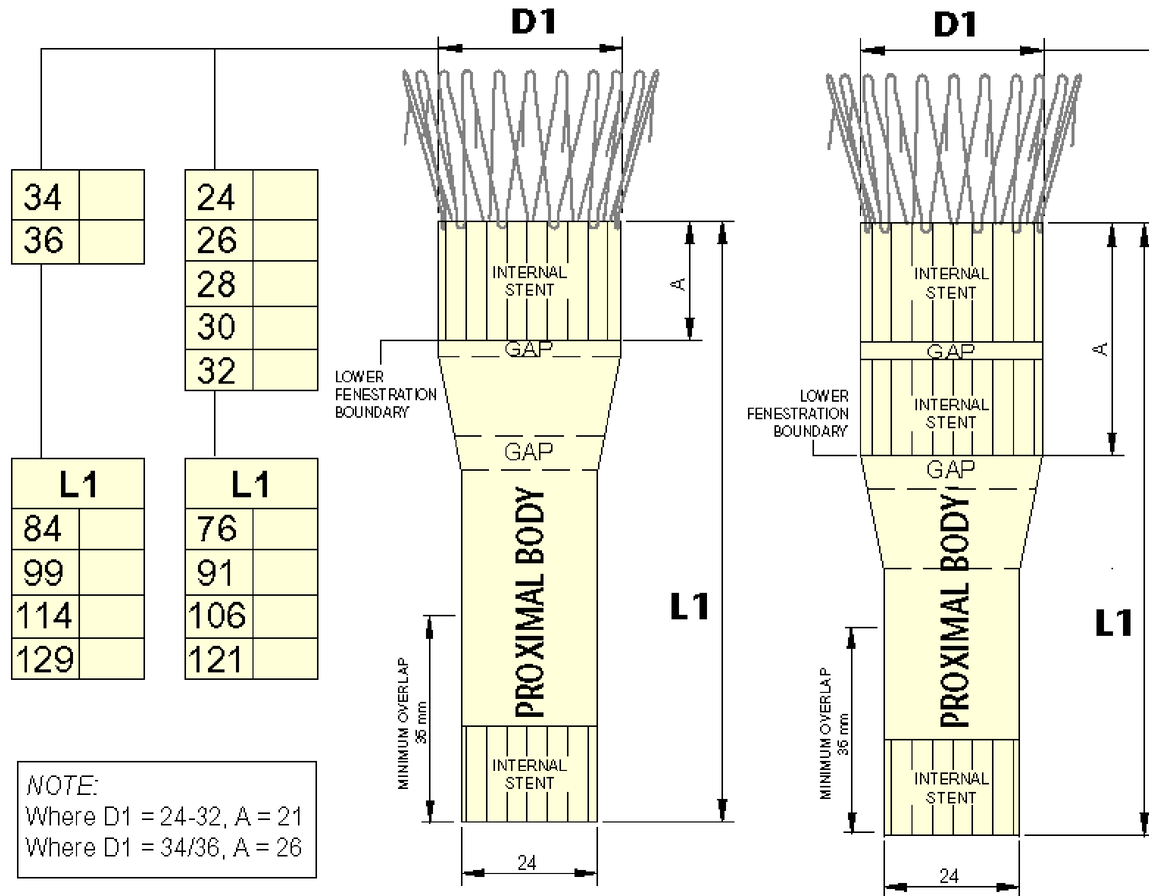


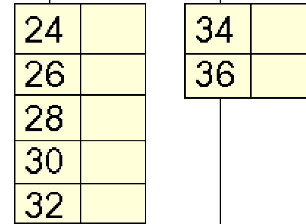


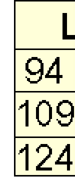
Perth 2009 Branched Arch Device (BAD!) with internal branches

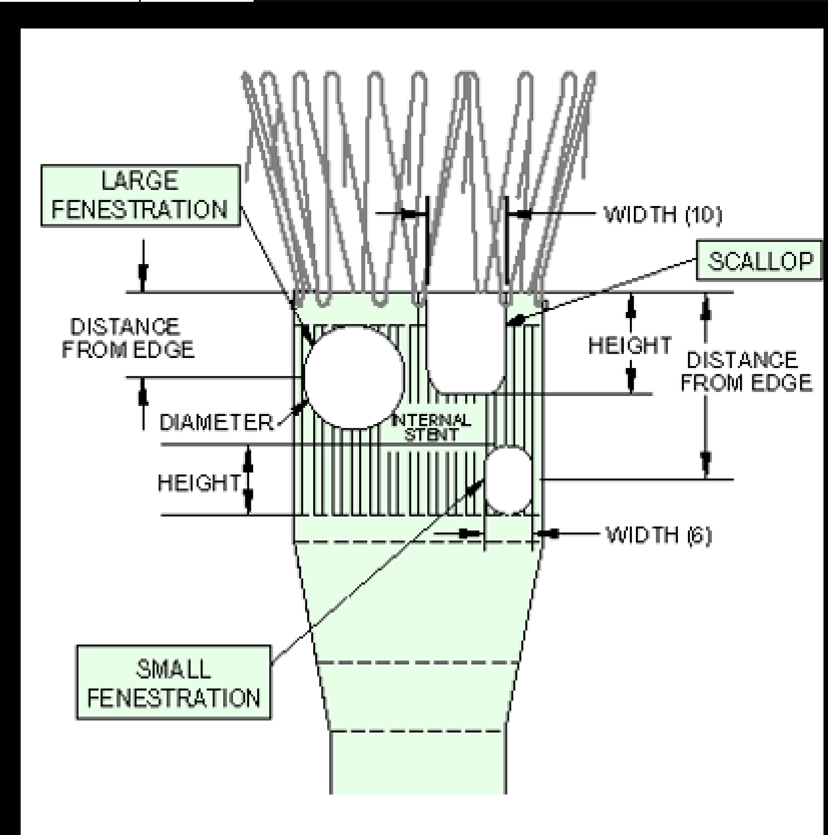
Perth 1993





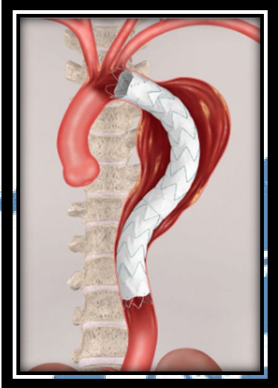


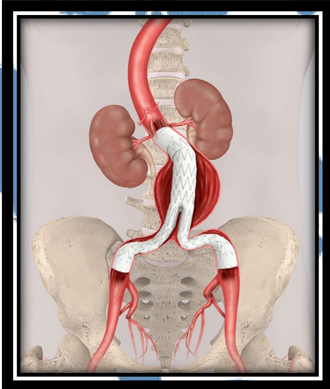


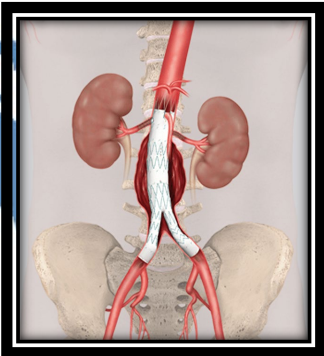


Complex individualised planning

Global Manufacturing







"THERE IS nothing more difficult to plan, more doubtful of success, nor more dangerous to manage, than the creation of a new system. For the initiator has the enmity of all who would profit by the preservation of the old institutions and merely lukewarm defenders in those who would gain by the new ones."

—Machiavelli (*The Prince*, 1518)

Australia thanks:

The patients that trusted and supported us

Royal Perth Hospital
Royal prince Alfred Hospital, Sydney
Cook Australia and Cook Medical (USA)
University of Western Australia
CSIRO, Melbourne

And innumerable colleagues around the world

Australia honours RPH's team leaders for contribution to treatment of aneurysmal arterial disease

Turab Chakera AM

David Hartley AM
Michael Lawrence-Brown AO