

Implants:- Burial and Cremation

Ben Whitworth, Dip FD, MBIE, MEAE
The Dodge Company Ltd





“Correct. And in the case of a cardiac arrest, every second counts. Who can tell me why? Anyone? Clock’s ticking.”

Need an Implant?

- Examples of some current implants:
- Therapeutics Patches – Slow release Drug Therapy
- Pacemakers
- Defibrillators
- Implantable Loop Recorders
- Ventricular Assist Devices
- Implantable Drug Pumps
- Brachytherapy
- Fixation Nails
- Hydrocephalic Programmable Shunts
- Implantable Stimulators- Neuro-stimulators and Bone Growth Stimulators

What are They?

- In looking at all of these implants, it is first important to know what they are and when they are used for medical treatment as well at their effect on Burial or Cremation.

Therapeutic Patches:

- Basically put, therapeutic patches are drug delivery systems that are attached directly to the skin (nicotine patches) for various conditions.
- Can be used for pain control or for treatment of angina.
- Angina patches are known to contain nitro-glycerine and pose a potential risk when subjected to cremation.
- In burial, the question must be asked as to whether is it correct to bury a deceased human body, wearing such a patch. Does decomposition allow for therapeutic drugs to be released into the soil or water course?

Pacemakers/ Defibrillators:

- Pacemakers and defibrillators are used to control abnormal cardiac rhythms.
- A pacemaker typical is used to treat abnormal cardiac rhythms.
- Defibrillators are used to monitor heart rhythms and provide a shock if a dangerous rhythm is detected. This is done to prevent sudden cardiac arrest.
- Both pose a risk of explosion if subjected to cremation and should be removed prior to.
- Should they be removed prior to burial?

Implantable Loop Recorders:

- Known as insertable cardiac monitors, they are a small device about the size of a USB stick or packet of chewing gum.
- Placed just under the chest like a pacemaker or defibrillator.
- Used to monitor abnormal heart function, high heart rates and abnormal rhythms.
- Usually used to assess patient requirements for pacemaker or defibrillator.
- Pose a risk of explosion if subjected to cremation and should be removed prior to.
- Should they be removed prior to burial?

Ventricular Assist Devices:

- A mechanical pump, used to support blood flow in people with weakened hearts.
- Blood is taken from the lower chamber or ventricle of the heart and pumped to the lungs or the body and vital organs.
- Used when transplant is not possible or available.
- Pose a risk of explosion if subjected to cremation and should be removed prior to.
- Should they be removed prior to burial?

Implantable Drug Pumps:

- Used for targeted pain management, usually for treatment of chronic pain conditions.
- Comprises a pump unit with drugs reservoir and delivery catheter.
- The pump is placed under the skin, usually in the abdomen, although the pump can be placed in the gluteal region.
- Pose a risk of explosion if subjected to cremation and should be removed prior to.
- Should they be removed prior to burial?

Brachytherapy:

- Radio Active Iodine 125 seeds, used in the treatment of various types of cancer.
- Seeds are usually placed within or next to the area requiring treatment.
- Effective treatment in cases of cervical, prostate, breast and skin cancers.
- Radiation typically lasts for up to 12 months and should the patient die within this time the implants should be removed.
- Following 12 months the implants can remain.
- Further information can be received from the department of nuclear medicine.

Fixation Nails:

- Typically made from surgical titanium, which is inserted into the medulla (marrow cavity) of a long bone (femur) following breakage or osteoporosis (loss of bone density).
- Once inserted, the rod is hollow and is pressurised by injection of saline solution.
- Pose a risk of explosion if subjected to cremation.
- Should be de-pressurised by drilling or cutting prior to cremation.
- Pose no problem when buried.

Hydrocephalic programmable shunts.

- A ventricular peritoneal shunt use for the treatment of water on the brain – Hydrocephalus.
- The shunt allows for drainage of excess cerebrospinal fluid from the ventricles of the brain into the abdomen.
- The shunt prevents the flow of fluid in the wrong direction and opens when sufficient pressure is reached.
- Pose a risk of explosion if subjected to cremation and should be removed prior to.
- Should they be removed prior to burial?

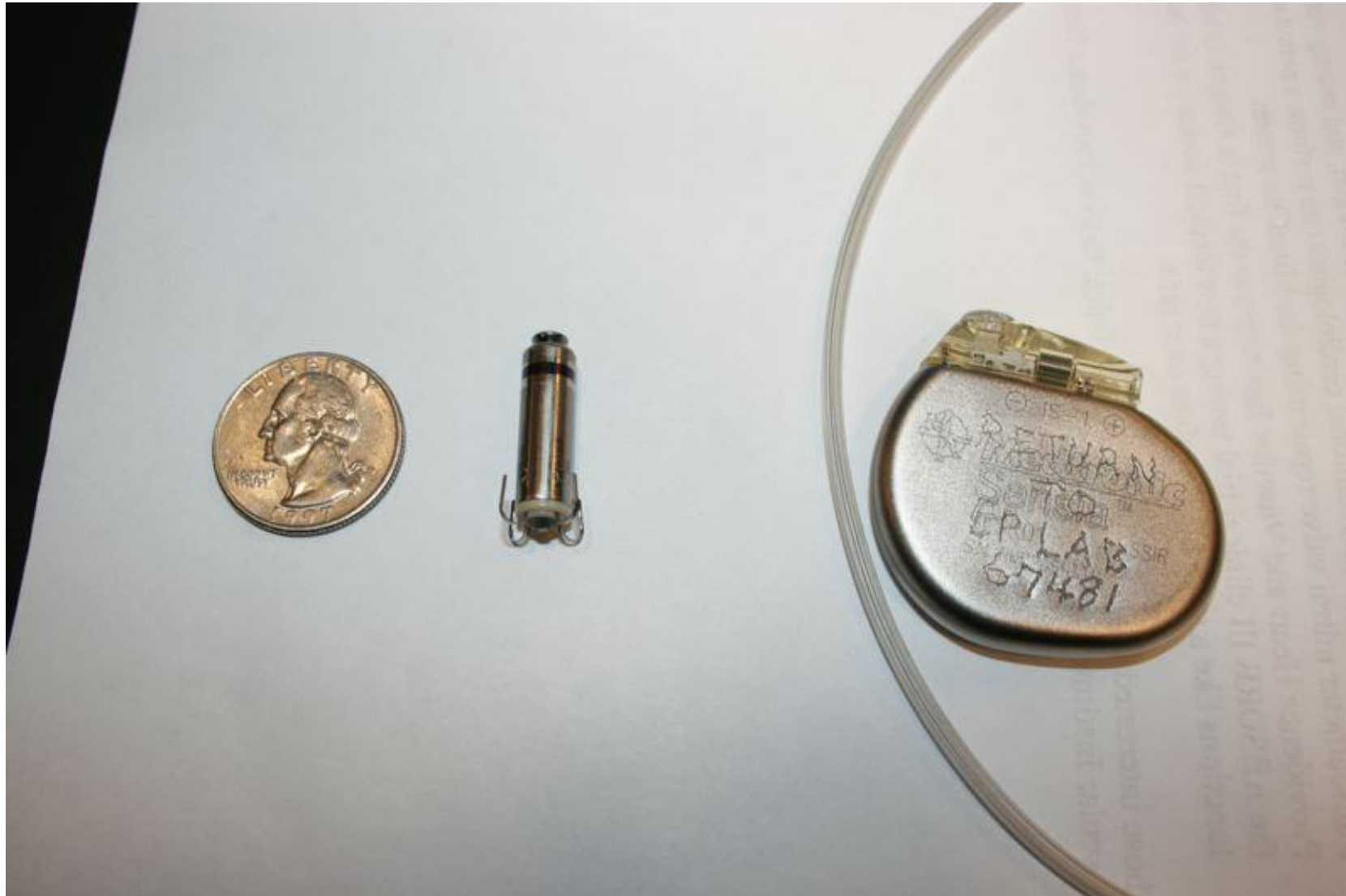
Implantable Stimulators:

- Approximate size of a pocket watch and implanted under the skin in the abdomen or in the gluteal region.
- Used in the management of chronic pain.
- Wires are connected to the epidural space near the spine.
- Pose a risk of explosion if subjected to cremation and should be removed prior to.
- Should they be removed prior to burial?

Micra Trans-catheter Pacing Systems



Pacemaker Miniaturisation



Trans-catheter Systems:

- Attached directly to the right ventricular wall of the heart.
- Minimally invasive as they are positioned into the heart wall through a venous catheter, placed into the femoral vein.
- 93% smaller than traditional pacemakers.
- Feature an ultra low power circuit, designed to deliver an estimated lifespan of 12 years.
- Fully compatible with all MRI scans.
- Removal requires a major procedure, which can be likened to an autopsy examination.

Questions?

Ben Whitworth, Dip FD, MBIE, MEAE

The Dodge Company Ltd

Tel: +44 07557 764861

Email: b.whitworth@dodge-uk.com