

Game Changers

IRREVERSIBLE ELECTROPORATION TREATMENT OF PANCREATIC ADENOCARCINOMA – A FIRST IN NORTHERN IRELAND

Miss R Wilson, Mr R S McCain, Mr G Kirk, Dr R Sathyanarayana, Dr R Lindsay

Department of Hepatobiliary Surgery and Interventional Radiology, Mater Hospital and Royal Victoria Hospital, Belfast

Pancreatic cancer has a rising incidence in the Western world and is the 5th most common cancer in the UK. Five-year survival rates are reported to be as low as 5%. Thirty percent of patients have unresectable disease due to the disease being locally advanced, and in this group median overall survival varies between 9 to 32 months. Irreversible electroporation (IRE) is a new technique with the potential to improve survival in these patients. This is a soft tissue ablation technique which involves the pulsation of electric currents through the tumour. It does this without significant heating of the targeted tissues and so limits damage to surrounding structured cells such as vessels and ducts. Studies have reported a median overall survival of up to 22-35 months following treatment of localised disease with IRE.

Intraoperative IRE debuted in Northern Ireland in November 2018 at the Mater Hospital, Belfast in a patient who had a locally advanced tumour and a previously failed pancreaticoduodenectomy. IRE probes were placed under ultrasound guidance by interventional radiologists following surgical exposure and the tumour was ablated. The patient made a full recovery and a follow-up CT scan showed a satisfactory ablation zone.

IRE provides another treatment modality for patients who previously would have only had the option of palliative chemotherapy. It is great to see this exciting new treatment is now a possibility for patients with inoperable pancreatic tumours in Northern Ireland.

1. Ansari D, Kristofferson S, Andersson R, Bergenfeldt M. The role of irreversible electroporation (IRE) for locally advanced pancreatic cancer: a systematic review of safety and efficacy. *Scand J Gastroenterol*. 2017; **52(11)**: 1165-1171. Epub 2017 Jul 7.
2. Holland MM, Bhutiani N, Kruse EJ, Weiss MJ, Christein JD, White RR, et al. A prospective, multi-institution assessment of irreversible electroporation for treatment of locally advanced pancreatic adenocarcinoma: initial outcomes from the AHPBA pancreatic registry. *HPB (Oxford)*. 2019 Feb 5. pii: S1365-182X(19)30005-X

THE NAIL-BED AS A WINDOW TO DISEASE: THE DEVELOPMENT OF A NURSE LED CAPILLAROSCOPY SERVICE.

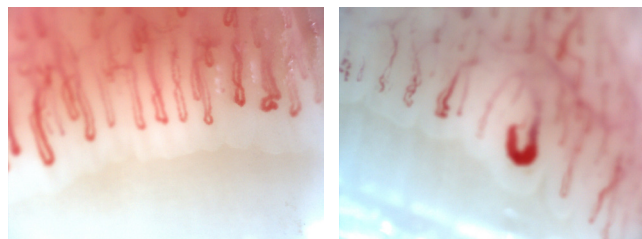
Dr A Elliott, Sister D Torrens, Dr A Pendleton

Department of Rheumatology, Royal Victoria Hospital, Belfast, BT12 6BA

Nail fold capillaroscopy is a non-invasive method of examining the nail-bed of patient's with raynaud's phenomenon (RP) to assess for any abnormalities. The first use of a microscope to visualise the capillary loops was when JC Klaus described his findings around 400 years ago¹. In the 20th Century the technique has found favour again with physicians describing specific patterns that relate to connective tissue disease. Three to twenty percent of the population have RP² and 10% of these patients will have connective tissue disease. These abnormalities include findings of capillary dilatation, bleeding and reduced density. Nail fold capillaroscopy now forms part of the European and American criteria for systemic sclerosis and not only does it allow earlier diagnosis and treatment for those with scleroderma but it can also facilitate discharge of those patients with RP and normal capillaroscopy findings.

Within the Belfast Trust members of the rheumatology service have been able to learn the technique under the tutelage of Professor Cutolo in Italy, an expert in the technique. After a pilot scheme in 2018 a nurse led service has now been established within the Trust. The technique involves a microscope linked with a camera; cedar oil is placed on the nail bed to create a smooth surface. The 2nd-5th fingers are visualised on both hands. Normal capillaries are homogeneously sized, hairpin shaped and regularly arranged, running parallel to skin surface. There is usually between 6 and 14 capillaries per millimetre with 9 being average.

Up to 60% of the normal population have isolated morphological anomalies but key features that are pathological include giant capillaries (>100micrometres), extensive areas with loss of capillary density and recurrent haemorrhages and neoangiogenesis. These changes are specific for systemic sclerosis but non-specific abnormalities can also be seen in dermatomyositis, mixed connective tissue disease and SLE.



Images from Belfast Trust Capillaroscopy clinic (Patient permission granted) 200x Magnification:

Image Left - Normal Capillaroscopy with hairpin capillaries and normal density.

Image Right - Abnormal Image in Systemic Sclerosis with a Giant capillary and loss of Capillary density.

1. Chojnowski, Marek M et al. "Capillaroscopy - a role in modern rheumatology" *Reumatologia*. 2016; **54 (2)**: 67-72.
2. Goundry Beth et al. "Diagnosis and management of Raynaud's phenomenon" *British Medical Journal*. 2012; **344**: e289.