UNOPERATED patients with unoperated infra-renal aortic aneurysms. Adjustments between groups were made for age, sex, mean arterial pressure, creatinine and the presence of diabetes using linear regression analysis. PWV was represented as the mean [95% CI lower-upper].
Results: A total of 105 studies were performed, CONTROL n=27, THORACIC n=30, ABDOMINAL n=25, UNOPERATED n=23. The ABDOMINAL group had an adjusted PWV of 11.9m/s [10.8-13.1], significantly higher than CONTROLS 8.8m/s [8.5-9.2] ($p<0.001$), THORACIC 8.8m/s [8.0-9.6] ($p<0.001$), and UNOPERATED 8.9m/s [8.0-9.8] ($p<0.001$).
Conclusions: These data suggests that the replaced abdominal aorta reduces arterial compliance. Thoracic grafting does not have an effect on PWV indicating that the proximal aorta contributes less to tonometric measurements of arterial stiffness. We provide a basis for future work to investigate how prosthetic aortic replacement affects ventricular-arterial coupling and the impact of pharmacological manipulation of vascular function in such patients.

PROGNOSTIC SIGNIFICANCE OF TOTAL DISEASE LENGTH IN OESOPHAGEAL CANCER

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Background: Oesophageal tumour length has long been considered an important prognostic indicator in oesophageal cancer (OC), and typically an operable tumour has been considered to be T1-3, N0-1, M0, with an endoscopic defined length of 5 cm or less.
Aims: The aim of this study was to test the hypothesis that endoluminal ultrasound (EUS) defined total length of disease (including both the primary tumour and the position and number of proximal and distal lymph nodes - ELoD) and the associated EUS lymph node metastasis count (ELNMC) are better predictors of outcome than endoscopic OC length and radiological TNM stage in patients undergoing potentially curative therapy with either surgery or definitive chemoradiotherapy (dCRT).
Methods: 610 consecutive patients diagnosed with OC and managed by a multidisciplinary team were staged by CT and EUS. The primary outcome measure was survival from date of diagnosis.
Results: 302 patients received surgery and 308 patients received dCRT. Univariable analysis revealed that survival was related to EUS T ($p<0.001$), N ($p<0.001$), M1a ($p=0.041$) stage, ELoD ($p=0.009$), ELNMC ($p<0.001$), and treatment type ($p=0.003$). Multivariable analysis revealed two factors; ELoD (HR 0.960 95% CI 0.923-0.999, $p=0.047$) and ELNMC (HR 1.123, 95% CI 1.062-1.188, $p<0.001$) were independently associated with survival.
Conclusion: ELoD and ELNMC should become part of routine OC radiological staging reports to optimise stage directed therapeutic outcomes.

ROLE OF POSITRON EMISSION TOMOGRAPHY (PET) IN PANCREATIC RESECTION FOR SUSPECTED PANCREATIC AND PERIAMPULLARY CANCER

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Background: A significant proportion of patients undergo unnecessary laparotomy because of incorrect diagnosis and understaging of pancreatic and periampullary cancer.
Methods: A systematic review of studies assessing PET was performed. Medline, Embase, Cochrane trials register, and Science Citation Index were searched until November 2009. The gold standard test was laparotomy with histological confirmation. Meta-analysis was performed using bivariate method and Littenberg-Moses method.
Results: Seven studies including 336 patients were included in the meta-analysis for distinguishing benign from malignant disease. The summary sensitivity and specificity were 0.892 and 0.745. This corresponds to a post-test probability of 0.91 for a positive PET and 0.30 for a negative PET. compared to a baseline probability of 0.75. Two studies including a total of 199 patients (who had undergone CT scan as standard work-up) were included in the meta-analysis for assessing resectability with curative intent. The summary sensitivity and specificity were 0.92 and 0.87. This corresponds to a post-test probability of 0.56 for a positive PET (i.e. patient has a 44% probability of curative resection if PET was positive) and 0.02 for a negative PET (i.e. patient has a 98% probability of curative resection if PET was negative) compared to a baseline probability of 0.15 (i.e. patient has a 85% probability of curative resection if laparotomy was done without PET).
Conclusions: PET has no role in distinguishing benign and malignant periampullary disease. A positive PET scan is unreliable but a negative PET scan can confirm curative resectability with high accuracy.

AN ANALYSIS OF TUMOURIGENESIS IN HUMAN MESENCHYMAL STEM CELLS EXPANDED IN VITRO

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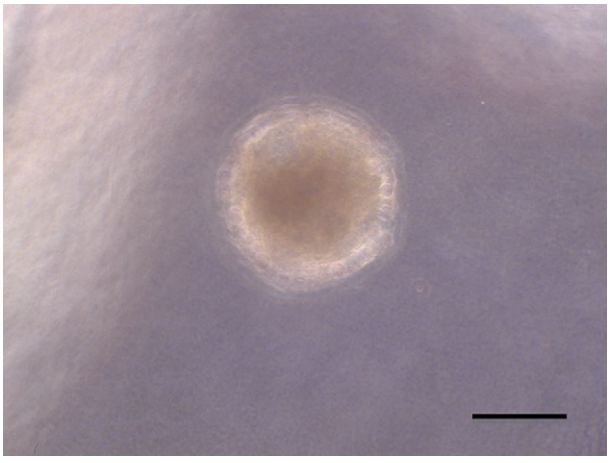
5-10% of fractures demonstrate significantly delayed healing or non-union. Although skeletal fixation has achieved limited success, no ideal treatment for non-union exists[1]. One potential is the use of human mesenchymal stem cells (hMSC's) to enhance fracture healing. While hMSC's display immunosuppressive properties reducing the likelihood of rejection, side-effects could include tumourigenesis[2].

Objectives: 1. Do hMSC's become tumourigenic when expanded in vitro and grown on agar?
2. Do time, cell concentration and passage number affect tumourigenesis?

Materials & Methods: hMSC's were obtained from bone marrow aspirates from iliac crests of patients undergoing surgical treatment for non-union tibial fractures. Cells from 4 patients at 3 passages, positive (HCT cells) and negative control lines (AA/CI cells), were seeded onto agar plates at different concentrations. Plates were incubated at 37oC, 5% CO2 for 4 weeks. Tumour colony numbers (image 1) and tumourigenicity were calculated weekly.
Image 1: Tumour colony



Scale Bar: 20μ = 2cm
Results: 1. hMSC lines produced no colonies ($p<0.001$)
2. Higher cell concentrations result in increased colony numbers ($p<0.001$)
3. Colony numbers decreased with time ($p<0.001$)

Conclusions: Tumourigenesis did not occur in hMSC's expanded in vitro. These results may support existing studies confirming hMSC's can be safely expanded in vitro for therapeutic use.
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CONTEMPORARY OUTCOMES OF URGENT CABG FOLLOWING NSTEMI; URGENT CABG CONSISTENTLY OUT PERFORMS GRACE PREDICTED SURVIVAL

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Introduction: The GRACE registry has shown that in-hospital risk of death following non-ST-segment elevation myocardial infarction (NSTEMI) is 5%, with a 11% mortality by 6 months. In GRACE, whilst 31% of patients received PCI, only 7% received coronary artery bypass grafting (CABG). To help identify patients at the highest risk following ACS the GRACE score was developed. This identified a highest tertile of patients who had an in-hospital death rate of 6.7% and a six-month death rate of 14%. The data on the results of urgent CABG following NSTEMI are difficult to interpret as these often mix patients who have had STEMI and NSTEMI and include urgent surgery for failed revascularisation.

Methods: 332 consecutive patients who had undergone CABG following NSTEMI from 2005 to 2009 were identified. The GRACE score was retrospectively calculated from hospital notes at the time of admission, and late survival data obtained from a prospectively maintained database.

Results: There were 6 deaths following surgery (1.8%). Survival at 6 months was significantly higher than predicted by the GRACE score in all groups. In patients with a predicted GRACE mortality of 0-10% the 6 month mortality was 0.7%, with a predicted mortality of 10-20% the mortality was 2.6%, and in patients with a predicted mortality of >20% the mortality was 0. In patients with a EuroSCORE of <8, 5 year survival was 95%.

Conclusion: In hospital CABG performed 48 hours after NSTEMI is associated with a low mortality risk and significant improvements in the GRACE predicted survival.

'THE IMPACT OF SIGN GUIDELINES ON CAROTID ENDARTERECTOMY IN SOUTH-EAST SCOTLAND'

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Background: Several studies have demonstrated a beneficial effect in patients undergoing carotid endarterectomy (CEA) within two weeks of suffering a focal neurological deficit. However, there is a large variation between units in the UK to provide CEA within the specified time.

Aim: This study aimed to evaluate whether the Edinburgh Vascular Unit (EVU) has improved delays from neurological symptoms to surgery, in accordance with Scottish Intercollegiate Guidelines Network (SIGN) guidelines published in December 2008, which advocate the need for CEA to be performed within two weeks of a neurological event.

Patients and Methods: Retrospective data related to CEA procedures carried out at the EVU between March 2007 and June 2010 (n=255) was analysed. The median was calculated for days from neurological symptoms to CEA, subdivided according to the four referring hospitals and whether the data was pre- (n=128) or post-publication of guidelines (n=127).

Results: Median delay from symptoms to surgery decreased in all four hospitals. Decrease in days from symptoms to surgery (p=0.037) was statistically significant in one hospital. The percentage of patients undergoing CEA within two weeks after symptoms increased from 25% pre-guidelines to 40.2% post-publication of guidelines. The percentage undergoing CEA within four weeks after symptoms increased from 57% to 74.1% over the same period.

Conclusion: There has been a significant improvement in CEA service provision since the implementation of SIGN guidelines. Further resource allocation is required to meet the two week target of CEA from symptoms in all patients.

DOES AN ENHANCED RECOVERY PROGRAMME AFFECT READMISSION RATES FOLLOWING COLORECTAL RESECTION?

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Background: Enhanced recovery after surgery (ERAS) is a clinical pathway for surgical patients designed to reduce hospital stay. Currently, this pathway is beginning to show that specific tailoring of treatment before, during and after surgery can achieve this goal. Patient safety following early discharge is of paramount importance. This study aims to compare 30 day readmission rates of those patients enrolled in an ERAS pathway versus those undergoing standard clinical care.

Methods: Ethical approval was granted by the MUHC. The hospital database and patient charts of 151 consecutive patients at Montreal General Hospital who underwent colorectal resection between 1st June 2008 and the 30th June 2009 were reviewed.

Results: 58 patients reviewed were in the ERAS pathway whilst 93 were reviewed in the standard care pathway. 30 day readmission rate was 10.3% and 9.7% respectively (p=0.98). Mean hospital stay was 7.21 (95% CI: 5.50, 8.92) days in the ERAS group and 10.55 (95% CI: 8.58, 12.52) days (p=0.02). There were no statistically significant differences in patient ASA morbidity between the two groups (p=0.64).

Conclusions: These results support current literature that enrolment in an ERAS pathway reduces hospital stay. Importantly, there is no increased rate of readmission if discharged home earlier from hospital. These data support the use of an ERAS pathway in routine clinical use.

AN AUDIT TO EVALUATE THE EFFECTIVENESS OF DERMATOSCOPY

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Background: Melanoma is an important cause of morbidity and mortality. The incidence has risen to 1 in 87, and is increasing by 7% each year.

Early recognition and excision remain the most successful method of increasing patient survival. However, cure rates remain poor due to early metastasis. The standard method of diagnosis is the naked eye with accuracy ranging from 65-80%. There is therefore a need for an additional diagnostic tool to ensure no malignant melanomas are missed and reduce the number of unnecessary biopsies.

Purpose: This study looks at the efficacy of the dermatoscope in increasing the sensitivity and specificity of diagnosis for melanomas. The sensitivity reflects the melanomas missed and the specificity reflects the unnecessary biopsies.

Method: 89 pigmented lesions from patients presenting to clinic, within an eleven-week period, were photographed with both a standard digital camera and a dermatoscope-camera.

16 health care professionals – consultants and SpRs in plastic surgery, general surgeons, and specialist nurses were asked, from each of the photographs, which lesions were malignant.

Results: The overall sensitivity of the dermatoscope was 68%, compared with 47% for the naked eye alone - an increase of 21%. This is statistically significant.

The overall specificity of the dermatoscope was 58% compared with 55% for the naked eye - an increase of only 3%.

Conclusion: The dermatoscope is an effective tool in diagnosis. It significantly increases sensitivity of diagnosis, therefore reducing the number of melanomas missed. The dermatoscope, however, did not significantly increase the specificity.

One argument is that the number of negative biopsies is acceptable in order to catch as many melanomas as possible. In addition, the low sensitivity would be reduced in practice when practitioners would be more cautious with real patients, and have a lower threshold for biopsy.