be slow, yet timely development of an adequate vascular supply is critical for skin graft revascularisation ("take").
Endothelial progenitor cells (EPCs) are stem cells which can be isolated from various sources, and have great potential as a cellular therapy for promoting vascular repair. This pilot study aims to develop a method to enhance wound healing by prefabricating microvascular networks in DS, prior to applying the construct to the wound.
Two clinically-available dermal substitutes were studied: Glyaderm and Matriderm. EPCs were isolated from adult peripheral blood and umbilical cord blood. EPCs formed a cobblestone-shaped monolayer in culture and expressed endothelial markers CD105 and CD146, but not haematopoietic markers CD14 and CD45. EPCs possessed high proliferative capacity, demonstrated de novo tubulogenesis capacity, and formed 3D tube-like structures when seeded onto Glyaderm and Matriderm.
These results demonstrate that microvascular networks can be prefabricated in DS, using a patient's own EPCs. Further work will determine if this can improve skin graft take and scar formation.

**ASIT ORAL POSTER: 0697: ALSGBI TRAINEE PRIZE WINNER: LAPAROSCOPY ON A SHOESTRING: A RANDOMISED COMPARISON BETWEEN AN INEXPENSIVE HOME-MADE STEREOSCOPIC DIRECT-VISION BOX TRAINER AND A COMMERCIAL MONOSCOPIC VIDEO-BASED TRAINER**

Vin Shen Ban [1], Matthew Bence [1], Matthew Bigwood [1], James Clemence [1], Aaron D'Sa [1], Daniel Carroll [2], Maurizio Pacilli [2]. [1] *Cambridge University Hospitals, Cambridge, UK;* [2] *Paediatric Surgery Unit, Cambridge University Hospitals, Cambridge, UK.*

**Aims:** Our aim was to develop and assess the laparoscopic training performance of an inexpensive home-made stereoscopic direct-vision box trainer (SDVT) against a commercial monoscopic video-based trainer (MVT).
**Methods:** 41 laparoscopic-naïve medical students were randomly assigned to one of four training-testing groups - SDVT-SDVT, SDVT-MVT, MVT-SDVT, MVT-MVT. For 5 consecutive days, each student trained on either the SDVT or MVT and was tested immediately after training on either trainer. The two time-limited tasks involved were 'threading Polo mints' and 'peg board bead transfer'. The number of 'successes' and 'errors' were recorded.
**Results:** Average 'successes' for both tasks increased linearly daily. The SDVT-SDVT and MVT-SDVT groups had more 'successes' compared to SDVT-MVT and MVT-MVT. 'Errors' were random without correlation to training or groups.
When results were grouped by 'testing' box, those tested on the SDVT had significantly more successes than those tested on the MVT ($p<0.05$). Grouping by 'training' box showed no such difference ($p>0.3$).
**Conclusions:** SDVT training produced similar results to MVT training. The SDVT is a much cheaper alternative to the MVT. Using stereoscopy through direct vision flattens the learning curve for beginners. This could enable trainees to build confidence and skills in their own time at minimal cost.

**ASIT ORAL POSTER: 0722: DOES DISTRACTION AFFECT THE LAPAROSCOPIC ABILITY OF NOVICE SURGEONS?**

David Neilly [1], Duncan Scrimgeour [1], Tim McAdam [1], Steven Yule [2]. [1] *Aberdeen Royal Infirmary, NHS Grampian, UK;* [2] *Harvard Medical School, Boston, USA.*

**Aims:** Laparoscopic surgeons perform complex tasks in a challenging, multifaceted environment. We investigated if distraction affects the novice surgeon's ability to perform a laparoscopic task.
**Methods:** Medical students were recruited through the local student surgical society. The students were randomised into three groups: without distraction ($n=16$), distraction with a pre-recorded clinical discussion ($n=14$) and distraction with a pre-recorded loud argument ($n=16$). After a five-minute practice session each student performed a laparoscopic stacking task using a laparoscopic simulator within three minutes to achieve a score out of twenty. Statistical analysis using analysis of variances (ANOVA) with post hoc tests and two-tailed unpaired t-tests were performed when appropriate.
**Results:** Forty-six medical students were enrolled in the study. The mean score achieved was 12.96. Distraction with a clinical discussion significantly reduced the mean score (14.88 vs. 11.29,$p<0.01$), but distraction with a loud argument had no effect (14.88 vs. 12.55,$p=0.15$).
**Conclusions:** Distraction in the form of a clinical discussion negatively influences the novice surgeon's laparoscopic ability but loud arguments do not. This should be taken into account for training in the theatre environment, especially for the novice surgeon.

**ASIT ORAL POSTER: 0802: IMPACT OF LOW PRESSURE LAPAROSCOPIC CHOLECYSTECTOMY ON HEPATIC FUNCTIONS**

Sham Singla. *Post Graduate Institute of Medical Sciences, Rohtak, India.*

**Introduction:** Pneumoperitoneum during laparoscopic cholecystectomy produces adverse hemodynamic and hepatic changes. To lower these undesirable effects, low pressure pneumoperitoneum (LPP) has been used.
**Aim:** To assess changes in liver function tests with LPP and compare these with Standard pressure pneumoperitoneum.
**Material and Methods:** A prospective randomized study, approved by the IEC, conducted at PGIMS, Rohtak from June 2010 to June 2011. Fifty patients, randomized into 2 group- Standard pressure group (SPG, 12-14mmHg) and Low pressure group (LPG 10mm Hg). The LFTs were done preoperatively, postoperative day 1(POD-1) and 7(POD-7). Chi-square and t-test were used for statistical analysis.
**Results:** The duration of surgery was 69 min in SPG and 72 min in LPG. There was a statistically significant difference in values of serum bilirubin, AST, ALT, PTI and INR on POD 1 when LPG was compared to SPG. Values of ALT, PTI and INR were still persistently higher on POD-7 in SPG and this difference was statistically significant when compared to LPG.
**Conclusion:** LPP reduces the intensity of hepatic enzyme derangement which may be useful in jaundiced patients undergoing laparoscopic surgery.

**ASIT ORAL POSTER: 0852: THERMOGRAPHIC STUDY OF SACRAL PERFORATOR ANATOMY**

Toby Jennison, Yezen Sheena, Joseph Hardwicke, Garth Titley. *Queen Elizabeth Hospital, Birmingham, UK.*

**Aims:** Perforators are arteries that supply the subcutaneous tissues and skin. The sacral area is a region with notoriously poor wound healing and conditions such as pilonidal sinuses and chronic pressure sores are difficult to treat. There are limited studies of the perforator anatomy in the sacral region. This study aimed to assess this to better understand the local vascular anatomy underlying these conditions and their best surgical management.
**Methods:** 20 healthy male volunteers were scanned using a thermal camera. Each had radii of 2.5cm and 5cm centred on the superior natal cleft marked. Thermographic 'Hot spots' representing perforators were marked and recorded.
**Results:** In 20 sacral regions thermally imaged there was a mean of 0.3 perforators (range 0-2) within 2.5cm of the natal cleft and a mean of 2.3 perforators within 5cm (range 0-6). 4 of the 20 participants had no perforators within 5cm of the natal cleft
**Discussion:** This study found few perforators within 5cm of the superior natal cleft. This limited perforator supply may account for the wound healing difficulties encountered in this region and the challenges reconstructive surgeons face in their management.

**ASIT ORAL POSTER: 0899: PUTATIVE GENES DOWNSTREAM OF FGFR2 CONTRIBUTING TO CORONAL CRANIOSYNOSTOSIS IN A CROUZON MOUSE MODEL**

Samintharaj Kumar [1], Emma Peskett [1], Jonathan A. Britto [2], Erwin Pauws [1]. [1] *UCL Institute of Child Health, London, UK;* [2] *Great Ormond Street Hospital, London, UK.*

**Aim:** One fifth of patients with craniosynostosis have a genetic diagnosis, many of which carry a causative mutation in an FGFR gene. Little is known about downstream molecular pathways, impeding the development of potential pharmaco-therapies.
The activating C342Y mutation in FGFR2-IIIc drives coronal synostosis observed in Crouzon syndrome. In a Crouzon mouse model, morphological differences between control wild-type (Wt) and $Fgfr2^{C342Y/+}$ (Mut) calvaria were found after E17.5 suggesting enrichment for genes causing coronal suture fusion.
**Methods:** Coronal sutures were micro-dissected from Wt/Mut mouse calvaria, and examined by microarray analysis for differences in gene expression profile.