ENDOUROLOGY SOCIETY
2014 Summer Student Scholarship

The Endourology Society is pleased to announce the following recipients of this year's **2014 Summer Student Scholarship**:

1. Mr. Jaspreet Singh Chhabra
   Muljibhai Patel Urological Hospital
   Mentors: Ravindra Sabnis

2. Lauren Poniatowski
   University of Minnesota
   Mentor: Robert Sweet

3. Nabeel Virani
   Barts Health NHS TRUS

Nabeel Virani

Endourology Society Summer Scholarship Report

Firstly I would like to thank the endourology society and their members for providing the scholarship and enabling the project to be carried out. Conducting this project has allowed me to gain a greater view of urology. It has furthered my interest and provided me with invaluable experience. It has also provided five other medical students keen on surgery the chance to experience what urology has to offer surgically as a speciality.

The project I carried out looked at assessing medical student's aptitude at minimally invasive techniques through simulation. We hypothesised that innate ability at the surgical techniques can be identified though simulation. Being able to identify those who have a predisposition towards minimally invasive techniques could be used to aid their future career choices.

Studies looking at the learning curve in novice surgeons while training in laparoscopy have shown that as many as 8% were unable to improve their skill in laparoscopy after ample practise. (Grantcharov & Funch-Jensen, 2009)

Minimally invasive surgery makes up a large part of the work carried out in urology as well as in other surgical specialities. Though very few medical student or foundation doctors receive any experience using or understanding the equipment. We hoped through this project to enable six medical students to learn and practise these techniques in a safe environment.

The use of simulation is a safe, humane and cost effective method of teaching which is becoming increasingly popular and for many years has been used in a number of industries were training while working poses unacceptable risk such as aviation and nuclear engineering.

For this project we recruited six medical students from Barts and The London Medical School. The students ranged from 3rd to 5th year students with an even split of male and female participants. All had a keen interest in surgery as a career. All the students were consented to participate in the project and given a brief outline of what will happen. A number of tasks had been created to access each of the student's laparoscopic and endoscopic skills. These were separated into laparoscopic and endoscopic tasks. The laparoscopic tasks consisted of; picking and placing eight sugar cubes, stacking eight sugar cubes and a delicate cutting task which can be seen in figure 1. It involved cutting a marked circle from the glove of the outside without puncturing the balloon which was within it. For the endoscopic task, a simulated bladder model and rigid cytoscope was used with stickers identifying key areas within the bladder as shown in figure 2. Each of the tasks had a time limit associated with it. Their abilities were assessed by two senior surgeons who are competent with the techniques being tested and marking the participants using validated assessment criteria. The participants were given a brief demonstration of each task before they started. Each student then carried out the task while being assessed. This was to provide a baseline untrained level for each student.

Figure 1 – Showing a student carrying out the initial untrained laparoscopic cutting task

Figure 2 – Showing a student carrying out the rigid cystoscopy task during the practise time.

This was followed by the two assessors providing detailed teaching and instructions on the task. The participants were then given a sufficient amount of practice time. After this the students were asked to carry out the tasks again and reassessed.

Figure 3 – Showing Mr Patki, Urological Surgeon, giving a detailed demonstration to the medical students.

Figure 4 – Showing the students carrying out the laparoscopic cutting task after receiving the detailed demonstration and practise time.

The results have shown each of the students improved with the training; through analysis of the data it was possible to identify some key points;

- It was possible to isolate a few of the students who had a higher baseline and continued to improve with training.
- As well as participants with a baseline score similar to that of the other students but who improved substantially when compared to the other students.
- Assessors were not aware of two students who had prior experience in laparoscopy but both these students received scores that were higher indicating good internal validity.

We intend to also investigate the students aptitude towards robotic surgery, unfortunately the robotic simulator had to be sent to Germany for essential maintenance for the majority of summer. Thus we have not yet been able to conduct that part of the project but we will in the coming month.

Once all of the data has been collected we intend to produce a paper detailing the results in full.

Finally I would like to acknowledge and thank Mr Patki and Ms Ahmed for providing help, guidance and resources to insure this project was possible. I would also like to thank all of our participants for their eagerness, punctuality and dedication to the project.