Study Objective: Sparked by increasingly widespread use of laparoscopy, research on visuospatial and psychomotor learning curves has shown distinct "tiers" of student aptitude. Among lower aptitude students, studies suggest that some – but not all – will achieve proficiency. However, current medical education affords limited opportunities for students to gain skills. As the first step in designing a targeted, early-intervention program, we sought to identify students interested in procedural specialties but with lower psychomotor aptitude.

Design: Prospective cohort study.

Setting: Academic medical center.

Patients: Second-year medical students were eligible. 42 students (34.7%) participated.

Intervention: Participants completed: 1) survey about demographics, self-rated visuospatial and psychomotor skill, surgical experience, and interest in a procedural career, 2) four validated, visuospatial aptitude assessments (VSP), and 3) psychomotor aptitude assessment using a Fundamentals of Laparoscopic Surgery (FLS) simulator (peg transfer).

Measurements and Main Results: 54.8% reported an interest in a procedural specialty. Analysis included Pearson and Spearman correlations. Faster FLS time was associated with self-rated dexterity (p.<.001) and procedural interest (p=.018). The high-interest group had a significantly tighter interquartile range (IQR=62.7sec, mean=133.3sec, p=.001). The high-interest group accounted for 5/19 students (26.3%) with FLS scores slower than the mean. In the high-interest group alone, 8/11 students (72.7%) who were slower than the mean considered themselves to have above-average dexterity.

Conclusion: Despite a small sample size, our findings contribute to existing data describing tiers of aptitude; however, in contrast to other research, VSP was not a predictor of performance. We identified a cohort of "high-interest, lower-aptitude" students who we believe will benefit from a deliberate practice step in designing a targeted, early-intervention program, we sought to identify students interested in procedural specialties but with lower psychomotor aptitude.
approaching the perineum and abdomen as a single surgical field when performing TLH.

214 Open Communications 19 - New Instrumentation or Technology
(2:15 PM - 3:15 PM)

2:15 PM – GROUP A

Image Comparison of a Mobile Colposcope (EVA) versus a Standard Colposcope for Directing Cervical Biopsies in Women with Abnormal Pap Smears: A Non-Inferiority Trial

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Study Objective: Cervical Pap screening and colposcopy are proven tools which aide in the diagnosis and management of dysplasia, which can ultimately prevent the development of cervical cancer. Although cervical Pap screening is widely available across the U.S., over 10 million women have limited access to a trained colposcopist, thus receive inadequate follow up when an abnormal Pap smear is encountered. This study served to compare an inexpensive cell-phone based mobile colposcope (EVA) with the more expensive standard colposcope in the evaluation of women with abnormal Pap smears.

Design: Prospective, non-inferiority trial.

Setting: A large community-based hospital system in San Diego, California, and a community health clinic in Tijuana, Mexico.

Patients: Woman ages 30-45 who were referred for colposcopy following an abnormal Pap smear or HPV DNA test.

Intervention: Each patient had images obtained with a traditional colposcope and the mobile colposcope. Experienced gynecologists then evaluated paired images (plain and green filter) in random order using a web based program. The expert would make an assessment of 1) normal, or 2) abnormal. For abnormal images, the expert would electronically mark the site(s) on the image where a biopsy would be recommended.

Measurements and Main Results: The image was divided into 12 radial sectors and the marked site for biopsy was compared. Images that were considered normal, or those where biopsy site recommendations were within +/- 30 degrees were considered equivalent; unmatched biopsy sites were considered non-equivalent. Initial review of the data reveals equivalence between images.

Conclusion: Through digital image capture and internet-connection, the Enhanced Visual Assessment (EVA) System can allow remote interpretation and recommendations in settings without an expert colposcopist. The EVA system can help more providers perform more advanced cervical cancer screening and diagnosis to women in low resource settings within the U.S., and around the world. This could help lower the morbidity and mortality related to cervical cancer.

215 Open Communications 19 - New Instrumentation or Technology
(2:15 PM - 3:15 PM)

2:22 PM – GROUP A

First In Vitro Results of a Manually Controlled Hysteroscopic Tissue Removal System (RESECTR *)

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Study Objective: To evaluate resection time of a new manually controlled disposable hysteroscopic tissue removal device, in an in vitro setting was built, using umbilical cord tissue as polypl-like surrogate.

Design: In vitro trial for two different sizes of RESECTR device; 9 French (Fr.) (3mm O.D.) and 5 Fr. (1.65mm O.D.)

Measurements and Main Results: Twenty-five tissue fragments (n=25, mean weight 1.156g (median 1.2g; range 0.9-1.3g)) were resected with the 9 Fr. (3mm) devices. The mean resection rate was 2.2836g/min (m:0.6;r:1.34-2.95). Twelve tissue fragments (n=12, mean weight 0.79g (m:0.8;r:0.5-1.2)) were resected with the 5 Fr. (1.65mm) devices. The mean resection rate was 0.56g/min (m:0.52;r:0.45-0.79).

Conclusion: Both devices resected tissue within acceptable time limits (<3 minutes). The cutting speed depends on the number of squeezes of the handpiece per minute, with each squeeze initiating 6 cutting movements. The small diameter device resected significantly slower than the larger size RESECTR (mean rate 0.56g/min versus 2.28g/min, P<0.0001). However, this thin instrument would serve best for hysteroscopic tissue removal in an ambulatory setting. These promising devices offer similar potentials as the commercial available hysteroscopic tissue removal systems whereas introduction needs less investment. They can decrease the complexity of the existing motorized morcellation procedures. Clinical implementation studies have to be done to provide more insight in future possibilities.

216 Open Communications 19 - New Instrumentation or Technology
(2:15 PM - 3:15 PM)

2:29 PM – GROUP A

Mini-Laparoscopy by Using Percutaneous Instrument in Total Laparoscopic Hysterectomy: Single Institution Experience

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Study Objective: To evaluate the feasibility of mini-laparoscopy (M-LPS) by using percutaneous endoscopic instrument in total laparoscopic hysterectomy (TLH).

Design: Prospective observational study.

Setting: Tertiary-care university-based teaching hospital and academic affiliated private hospital.


Intervention: M-LPS was performed through one optical transumbilical 5-mm trocar, one 5-mm ancillary port on the right side, one 3-mm ancillary port on left and one 2-mm percutaneous endoscopic instrument (MiniGrip Handle, Teleflex, USA) A 5-mm 0-degree endoscope, 3 mm laparoscopic instruments and integrated bipolar and ultrasonic technology (Thunderbeat, Olympus, Japan) were