USING CADAVERS TO ENHANCE SURGICAL TRAINING

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CONFLICTS OF INTEREST

- None

- A Special thanks to Dr. Summer Youker for initiating the cadaver lab at UC Davis and continuing to support resident education
- More Cosmetics
- More Elective Time
- More Surgery training
  - 8 weeks of Surgery rotations per year
    - Toe nail surgery every other week at VA with podiatry
    - Toe nail surgery/procedures are primarily done by podiatry
Fresh cadavers improve the confidence of third year medical students in performing complex procedures.
DO CADAVERS HELP EDUCATE?

Cadaveric surgical anatomy course helped improve resident knowledge
DO CADAVERS HELP EDUCATE?

Advanced surgical skills for exposure in trauma: a new surgical skills cadaver course for surgery residents and fellows.

Kuhls DA, Rissucci DA, Bowyer MW, Luchette FA.

Abstract

BACKGROUND: Surgical education is changing owing to workforce and economic demands. Simulation and other technical teaching methods are used to acquire skills transferable to the operating room. Operative management of traumatic injuries has declined, making it difficult to acquire and maintain competence. The ASSET course was developed by the Committee on Trauma’s Surgical Skills Committee to fill a surgical skills need in resident and fellow education. Using a human cadaver, standardized rapid exposure of vital structures in the extremities, neck, thorax, abdomen, retroperitoneum, and pelvis is taught.

METHODS: A retrospective analysis of 79 participants in four ASSET courses was performed. Operative experience data were collected, and self-efficacy questionnaires (SEQs) were administered before and after the course. Course evaluations and instructor evaluation data were analyzed. Student’s and paired samples t tests as well as analysis of variance and Spearman ρ correlation coefficient analysis were performed using α at p < 0.05. We hypothesized that the ASSET course would teach new surgical techniques and that learner self-assessed ability would improve.

RESULTS: Participants included 27 PGY-4, 20 PGY-5, 24 PGY-6 or PGY-7 and PGY-8 at other levels of training. Self-assessed confidence improved in all body regions (p < 0.001), with the greatest increase in upper extremity and chest. Pre- and post-SEQ scores correlated with trauma operative experience. Precourse SEQ scores differed by level of training. Instructor evaluations correlated with previous experience on a trauma service. Program evaluations averaged 4.73 on a 5-point scale, with gaining new knowledge rated at 4.8 and learning new techniques at 4.72.

CONCLUSION: A standardized cadaver-based surgical exposures course offered to senior surgical residents adds new surgical skills and improves participant self-assessed ability to perform emergent surgical exposure of vital structures.

Adds new surgical skills and improved self-assessed ability to perform procedures
HOW DO I SET UP A CADAVER LAB?

- Contact local body donation program and fill out paperwork
- Request participation from as many skilled surgical faculty as possible
- Collect expiring surgical materials
- 2 hour pre-cadaver lab surgical skills training session
- 4 hour hands-on cadaver session
<table>
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<td>Complete and partial nail avulsions</td>
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<td>Nail bed and matrix biopsies</td>
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<td>Excisions</td>
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OUTCOME

The cadaver lab has helped me feel more comfortable performing basic skin surgery techniques

The cadaver lab has helped me with my surgical skills in clinical practice

The cadaver lab has helped me feel comfortable in performing nail avulsions

Answered: 8  Skipped: 0

The cadaver lab has helped me feel comfortable in performing nail biopsies

Answered: 8  Skipped: 0
“Valuable in increasing hands on experience with surgical techniques and learning new techniques”

The cadaver lab session was very valuable in increasing hands on experience with surgical techniques and learning new techniques. It was so helpful to have surgical faculty present to provide teaching and guidance. I really appreciated having this session!

Fantastic experience.

Great lab!

This is an incredible opportunity for resident training on nail procedures as well as general surgical technique.

Thanks all the attending involved in organizing and teaching.

This was very helpful. I think, if possible, this would be a great addition to our yearly curriculum.

“Incredible...training on nail procedures”

“Would be a great addition to our yearly curriculum”
Cost and logistics of implementing a tissue-based American College of Surgeons/Association of Program Directors in Surgery surgical skills curriculum for general surgery residents of all clinical years.

Henry B1, Clark P1, Sudan R2.

Abstract

BACKGROUND: The cost and logistics of deploying the American College of Surgeons (ACS)/Association of Program Directors in Surgery (APDS) National Technical Skills Curriculum across all training years are not known. This information is essential for residency programs choosing to adopt similar curricula.

METHODS: A task force evaluated the authors' institution's existing simulation curriculum and enhanced it by implementing the ACS/APDS modules. A 35-module curriculum was administered to 35 general surgery residents across all 5 clinical years. The costs and logistics were noted, and resident satisfaction was assessed.

RESULTS: The annual operational cost was $110,300 ($3,150 per resident). Cost per module, per resident was $940 for the cadaveric module compared with $220 and $240 for dry simulation and animal tissue-based modules, respectively. Resident satisfaction improved from 2.45 to 4.78 on a 5-point, Likert-type scale after implementing the ACS/APDS modules.

CONCLUSIONS: The ACS/APDS skills curriculum was implemented successfully across all clinical years. Cadaveric modules were the most expensive. Animal and dry simulation modules were equivalent in cost. The addition of tissue-based modules was associated with high satisfaction.

Cadaveric Models Were MOST EXPENSIVE
# Supplies

- For 15 residents
  - box of scalpels
  - box of small/med/large gloves
  - 5 3cc syringes with large needles and 5 30gauged needles
  - 15 scalpel handles vs disposable scalpels
  - 15 suture kits (needle driver, scissor, forceps)
  - 7 suture scissors
  - 7 heavy gauge hemostats
  - Nail spatulas and Freer (periosteal) elevators
  - Nail splitters (anvil splitter)
  - Suture of all types (look for any that are expired or soon to expire)

# Cost of Cadavers

- Pricing for 4 upper extremities, 1 head= $5,220
If a program can afford the cost, cadaver labs can serve as a valuable procedural teaching tool.
THANK YOU