joint pain, and AMS symptoms. The consensus was to “suffer through” any symptoms. Twelve subjects (10%) were unaware that acclimatization was a recommendation for ascent to altitude.

Conclusions.—The dissemination of accurate information regarding acclimatization to high altitude is paramount for the prevention of AMS, not just for the polar explorer but also for the high altitude recreationalist. Being aware of the subtleties and risks of AMS, as well as embracing acclimatization guidelines as a primary prevention strategy of AMS, will bode well for all high mountain travelers as well as for the healthcare providers who inform them.

Leslie H. Rozier, DNP, APRN, FNP-C
Pinedale, WY, USA

Evaluation of a Simulation Training Program for Uncomplicated Fishhook Removal

Background.—There is a paucity of literature determining the best technique for routine fish hook removal (FHR). A professional literature search primarily found case reports. The literature does not describe any methods for teaching or evaluating FHR with physicians or the use of simulation for teaching and evaluating FHR.

Objective.—To evaluate the effectiveness of a FHR simulation workshop using investigator-developed diagrams, practice models, and a teaching video.

Methods.—This is an Institutional Review Board-approved descriptive, prospective, educational study. The primary outcomes are the learner's perception of ease of learning, performance ability, and amount of tissue damage for each technique. A 2.5-minute educational video and instructional visual diagrams were created to teach 4 techniques: simple retrograde, string pull, advance and cut, and needle cover. Learners performed each technique on a model and placed in rank order their preferences for ease of learning, performance, tissue damage, and overall choice.

Results.—Of the total group of 20 learners (85% emergency medicine residents/faculty, 67% male, 40% recreational fishers), 35% had previous FHR experience. On first attempt, 90% had successful FHR using all techniques except needle cover (40%). Simple retrograde was rated easiest to learn (75%) and to perform (55%), and caused least damage (35%), whereas needle cover was ranked hardest to learn (85%) and perform (80%), and advance and cut caused the worst damage (40%). Overall preferred technique was tied between simple retrograde and string pull (35%), with needle cover least preferred (65%). Of interest, despite its perception for causing the most tissue damage, advance and cut was the preferred technique learners would use on the face (40%) or on an extremity (50%).

Conclusions.—This study is the first to experimentally evaluate physician learning and preferences for FHR techniques. After a brief educational session, physicians could effectively use all techniques except needle cover.

Simple retrograde and string pull were the overall preferred techniques.

Scott McMaster, DO
David Ledrick, MD
Julies Stausmire, MSN, ACNS-BC
Toledo, OH, USA

Can Novice Practitioners Interpret Ultrasound Images in a Wilderness Setting?

Background.—As portable ultrasound (US) devices are becoming lighter, smaller, cheaper and more durable, the feasibility of US use in wilderness medicine (WM) applications is being explored. A barrier to US use is the training of providers. Studies have already examined the WM provider's ability to create appropriate images in wilderness settings. Few studies have looked at training providers to appropriately use US images to independently make decisions about treatment and evacuation.

Objective.—This study will evaluate novice participant's abilities to interpret ultrasound images in a wilderness setting after a brief, on-line tutorial. It is hoped that this will help refine US training for WM providers.

Methods.—Participants registering for an established WM simulation were asked to watch an on-line tutorial before the event. All participants received unique log-in capability, allowing tracking of who actually participated in the tutorial. During the event, one of the medical challenges was an US interpretation segment in which each subject was presented with a series of US videos requiring interpretation. The accuracy of participants' readings was assessed and compared to their level of training and whether they accessed the on-line video.

Results.—There were 72 participants in the study; 43 watched all 3 training videos. Physicians (attending and residents) were significantly more likely to identify intraperitoneal fluid (89%) than nonphysicians (64%), but physician performance was not improved by watching the videos (89% vs 90%). Among the nonphysicians, watching the videos was significantly associated with identifying intraperitoneal fluid (76% vs 47%). Results for pneumothorax trended similarly but did not reach significance.

Conclusions.—For novice providers, an on-line training program followed by simulation testing provides a reasonable format for learning interpretation of US images. Further curricular refinement will be necessary to be able to train to full competency.

Andrew Nyberg, MD
Halsey Heinselman, MD
Mohamad Moussa, MD
David Ledrick, MD
Michael Omori, MD
Toledo, OH, USA

Michael Caudell, MD
Augusta, GA, USA