

Editorial

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Volume 1 : Issue 1

Article Ref. #: 1000ORTOJ1e001

Article History

Received: November 16th, 2015

Accepted: November 23rd, 2015

Published: November 24th, 2015

Citation

Gomez JA, Vitale MG, Lenke L.
Coaching orthopaedic surgeons:
can visiting professors be a valuable
surgical coach? *Orthop Res
Traumatol Open J.* 2015; 1(1): e1-e4.
doi: [10.17140/ORTOJ-1-e001](https://doi.org/10.17140/ORTOJ-1-e001)

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Coaching Orthopaedic Surgeons: Can Visiting Professors be a Valuable Surgical Coach?

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Much has been discussed about coaching on different fields and medical training has not been left aside. Atul Gawande's article in *The New Yorker* back in 2002 was an eye opener for many regarding the fact that surgeons need and should be constantly coached.¹ Now-a-days, more than in the past surgeon's performance is being scrutinized and attempts to measure surgical skills have been in the cross hairs of public health entities.

Little has been said about coaching in the orthopaedic field, and although orthopaedic surgeon's clinical activities may include coaching on a daily basis we have to be aware of it and steps to improve and better characterize it should be undertaken by the academic as well as the non-academic orthopaedic surgeon. Just like every professional athlete uses a coach to carry and maintain them at the most proficient level possible within their discipline, surgeons should take this into consideration. Data supporting coaching in other areas is mainly based on expert's recommendation but on the field of education several randomized trials have demonstrated the importance and beneficial effects of coaching.²

These educational trials have demonstrated that the quality of a teacher has the biggest impact in how much students can learn and other variables such as class size or types of testing are not as influential in the ability to learn.¹ In an educational trial authors gave verbal instructions to a group of teachers and found that only 10% of teachers used the new skill. After modeling, practice, and feedback were added, the rate of adoption of the new skill by the teachers increased to 19%. But after the addition of peer coaching an astounding 95% of teachers utilized the new skill.³

We know coaching is important and much has also been written about the characteristics of a coach. "Partnership learning" is a term coined by Jim Knight who has published remarkable papers on coaching. The idea is to provide "objective and constructive feedback on what he or she observes, helping the practitioner to recognize what is successful and what can be improved. Coaches do not judge or instruct; instead, they guide and facilitate. They act as collaborators and partners to assist practitioners to develop a better understanding of their own performance, and they help them to use their experience, knowledge, and abilities to provide the best care possible."⁴ Knight has suggested that this approach is significantly more beneficial compared to the most traditional professional education/training seen in medicine denominated "dominator approach" (i.e. an expert giving a slideshow presentation to a group).⁵

Application of lessons learned elsewhere have been applied to medical coaching. Learning principals can be applied to medical training and, thus, to the development and improvement of surgical skills. Boonyasai, et al.⁶ listed those principals in their 2007 publication which can be adapted to surgical training:

- Enabling surgeon (trainee) to be an active participant.
- Providing content relating to the surgeon's current experiences.
- Assessing surgeon's needs and tailoring teaching to their past experience.
- Allowing surgeons to identify and pursue their own learning goals.
- Allowing surgeons to practice their learning.
- Supporting surgeons during self-directed learning.
- Providing feedback to surgeons.
- Facilitating surgeon's self-reflection.
- Role-modeling behaviors.

Recently at a children's hospital in New York a very interesting and rewarding coaching experience was conducted. This experience sparked the idea of writing this article in an attempt to bring more attention towards coaching of orthopaedic surgeons. Because we believe as other authors have pointed out that coaching can be valuable for surgeons at all stages of their career.⁷ Dr. Lawrence Lenke world leader in spinal deformity visited New York and accompanied a surgical team to the operating room for an observation/coaching initiative during a posterior spinal fusion for adolescent idiopathic scoliosis. The case was uneventful and during the procedure Dr. Lenke observed closely details including: positioning, surgical prepping, approach technique, instrumentation as well as correction maneuvers performed by Dr. Vitale and Dr. Gomez. After the procedure was completed Dr. Lenke went over his observations with the surgical team and wrote his raw comments, which were as follows:

- ▶ Smoke evacuator needed during exposure, as bovie smoke is toxic.
- ▶ X-ray verification – perform earlier in case as at least 10 times the levels were “counted” during exposure as uncertainty existed – limits excessive prox/distal dissection knowing proper levels as early as possible and less time trying to sort out.
- ▶ Continued exposure – consider curetting of posterior elements at end of exposure to finalize cleaning of bony elements and then avoid repetitive cleaning through rest of case.
- ▶ Not palpating medial wall – appeared that sounding probe was mainly feeling floor, with more challenging pedicles, careful medial wall palpation would be advisable.
- ▶ Suction crossing over hands – right-handed surgeon – left hand sucker. So may want to keep a 2nd sucker/tip at top of sterile field that the operating surgeon can easily grab with his left hand while holding other instruments simultaneously in right hand.
- ▶ 22 min spent on right T12 apical screw – discussed potential use of K-wires with cannulated taps to help salvage initial pedicle breaches.
- ▶ During fluoro-imaging, consider using one sheet to cover wound while cutting a small hole for imaging markers to be exposed through hole. Then just cut the drape longitudinally and let fall off either end when done. Keeps center of sterile field safer.
- ▶ Hard to crossover wound to place concave apical screw. Need to trust co-surgeon and assist by pulling up with a right angle clamp as we discussed as the steep angle is hard to maintain from the other side and the screw will routinely skive lateral.
- ▶ Overall nice derotation mechanism but trust distal lock of rod once appropriate Sagittal alignment of rod is achieved so the alignment of the rod isn't loosened again after the derotation. In larger curves, consider holding derotation until both rods seated.
- ▶ Overall great work – thanks for letting me observe!

As evidenced by Dr. Lenke's thoughtful comments and coaching qualities, we believe that coaching on the medical field is imperative. Dr. Lenke's comments were discussed within the group and since that coaching session many of his points were well taken and now routinely used during scoliosis cases.

Specifically within orthopaedic surgery the coach must be an experienced surgeon. The coaching surgeon must have a trusting relationship with the “mentee”. The relationship must be flexible, thoughtful, respectful and constructive comments and feedback must always be present. In other areas such as consulting, the idea of an ‘internal coach’ within the organization has been proposed.⁸ But in the medical field this should be seen differently, as previously proposed by Greenberg:⁹ “coaches should not have administrative oversight for the surgeon they are coaching. This is to ensure that the content of coaching sessions remain focused on performance improvement and not on performance evaluations or career development.” And this was clearly of great significance

with our coaching experience.

Coaching can refine an orthopaedic surgeons' technical skill as well as enhance his intra-operative decision-making. As previously proposed in the education field cornerstone fundamentals to perform good coaching include: equality, choice, voice & dialogue, reflection and praxis.¹⁰ Translating these fundamentals to the operating room, we've generated the following coaching guidelines.

- Allowing the “mentee” surgeon to choose voluntarily a case and setting of the session will generate a comfortable workspace for both surgeon and coach.
- The mentee should speak freely and feel comfortable about questioning the coach's comments. Assuring that the coach does not have direct administrative or practice relation with the mentee supports this issue.
- Intra-operative comments might distract and be deleterious for the coaching session and could be distracting for the surgeon. Contrary to that, we believe, as others that post-surgical reflection can be safer and likely more effective.
- Privacy and confidentiality are paramount as well.
- Surgeon's insight is another important fundamental; the mentee must be allowed to apply coaching suggestions on his own way and obviously depending on the resources available to him.

Within different orthopaedic societies large interest has now been placed on surgical training and simulation such as during the International Pediatric Orthopaedic Society (IPOS) “Top Gun Competition”. We believe that including coaching within these efforts is of major significance. Some efforts on demonstrating the importance of coaching have been published within the surgical¹¹ and orthopaedic literature, such as a cervical spine instrumentation study that demonstrated that coached residents had significant decreases in short-term technique error rates compared to non-coached residents.¹² The American Academy of Pediatrics (AAP) in the area of Attention Deficit Hyperactivity Disorder (ADHD)¹³ and other groups have found positive results after including team coaching as part of their quality improvement initiatives. We believe that a very efficient way of instituting and achieving surgical coaching sessions could be to utilize visiting professors such as in our case example, as coaches. In our orthopaedic academic environment it is not uncommon to have a visiting professor for Grand Rounds on a weekly basis and reports have demonstrated their effectiveness.¹⁴ We believe this is a tremendous opportunity for a coaching program to be instituted. Currently efforts to achieve this in a constant manner are being attempted at our institution.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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