

3 Misconceptions About the Use of Navigation Systems for Spine Surgery

Written by Rob Kurtz
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Robert Watkins Jr., MD, orthopedic spine surgeon and co-director of Marina Spine Center at Marina Del Rey Hospital in Marina Del Rey, Calif., who has used navigation systems for computer-guided spine surgery for six years, discusses three common misconceptions about navigation systems.

1. They're time consuming, and take more time than the traditional approach. Dr. Watkins says consistent use of navigation systems, which have become more user-friendly in recent years, can actually help reduce surgical time.

"In the past, institutions used to bring out the computer for the really tough cases and they wouldn't use it for the routine cases," he says. "The problem with that is they're bringing it out just once every so often so no one really knows how the system works, and it's only being used on the toughest cases. Sometimes they would abort [use of the system] half way through because it was taking too much time, and because they didn't use the system consistently, they didn't trust the system."

He says one of the keys to reaping the benefits of a navigation system is embracing the technology and using it for every case. This will help teach the entire OR staff — personnel, techs, nurses and the doctors — how the system works and how to get it to work efficiently.

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"We've found use of the computer is at least time-neutral if not saves us time" compared to traditional approaches, Dr. Watkins says. "It takes about 30 minutes for us to get our image, set up the computer and put our instrumentation in. The great part is it takes us 30 minutes for an easy or a really difficult case — it doesn't matter. If you use it consistently, it can actually save you time, especially on difficult cases."

2. They're expensive, and not worth the investment. While purchasing a navigation system is an investment, Dr. Watkins says the way to properly look at the cost is to recognize the increase in accuracy that comes with its use.

"In order to compare how much it costs to use a computer versus not use the computer, you have to look at the cost to the patient if they have complications due to misplaced instrumentation," says Dr. Watkins. "If you have misplaced screws put into the spine, they can cause nerve damage, weakness, numbness, pain and a failure of the surgery."

"Overall, the cost to the healthcare system is actually reduced using computers and navigation because you have less re-operations and less complications," he says. "For patients, you have less loss of work days and less pain and suffering, which is a difficult thing to measure but obviously a real issue."

3. They're unnecessary, and current techniques are adequate. "A lot of surgeons think they don't need [navigation systems] and the technique they use currently is adequate," Dr. Watkins

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says. "I think for the most part that's true. If you have a lot of experience, you can certainly put instrumentation in just by feel and

by
using landmarks.

"But there are studies that have shown as much as high of a 20-30 percent misplaced screw rate with traditional techniques," he says. "Most of those screws don't actually injure the nerve and it's not symptomatic so the patient and the doctor never know it. But in up to five percent of the time, in one of these surgeries, there can be a symptomatic misplaced screw."

The problem with a misplaced screw is it is not as strong as an ideally placed screw, Dr. Watkins says. "This can eventually lead to a failed fusion, which doesn't show up for 6-12 months after surgery.

"While the computer navigation is not imperative to surgery and it is not the standard of care, at the same time it does improve accuracy, efficiency and safety of the surgery," he says.

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