Letters to the Editor

Kyphoplasty for the Treatment of Vertebral Compression Fractures with Anterior Vertebral Wall Destruction: How Can We Do It Better?

To the Editor:

It was with great interest that we read the article by Lim et al, "Kyphoplasty for the Treatment of Vertebral Compression Fractures in a Cancer Patient with Neurological Deficits and Anterior Vertebral Wall Destruction," published in the 2011 November/December issue of *Pain Physician* (1).

This is a well-prepared case report which introduces a new cement injection technique used in kyphoplasty for the treatment of vertebral compression fractures with anterior vertebral wall destruction. The technique mentioned in the article is a slow injection of highly viscous bone cement posterior to the anterior vertebral defect to build a barrier, followed by a second injection 10 minutes later to allow the previously injected cement to harden. It is emphasized that the first injected bone cement used as a barrier should be thicker than usual to minimize the risk of accidental leakage. The viewpoint of the author is right, but we have some disagreement on the amount of bone cement used as a barrier and delayed time between the 2 injections.

We suggest using a smaller amount of bone cement to protect against anterior leakage (2-4). The reason is that if the cement used as a barrier, as mentioned in the article, is too thick, then the second injected cement could become separated from the first after the operation, especially when the time between injections is too long (Fig. 1). In the article a second injection is given 10 minutes later to allow the previously injected cement to harden. Ten minutes is a really long time. As senior orthopedic surgeons, my co-authors and I are well aware that just after the first filling has solidified (usually no more than 3 minutes), late-stage bone cement in the paste phase should be applied to allow the filling to diffuse evenly, and then the second injection and "barrier" could be integrated together as one part (Fig. 2).

In summary, to patients with vertebral compression fractures with anterior vertebral wall destruction, we also advise the "barrier technique" to minimize anterior leakage of the cement. However, the amount of

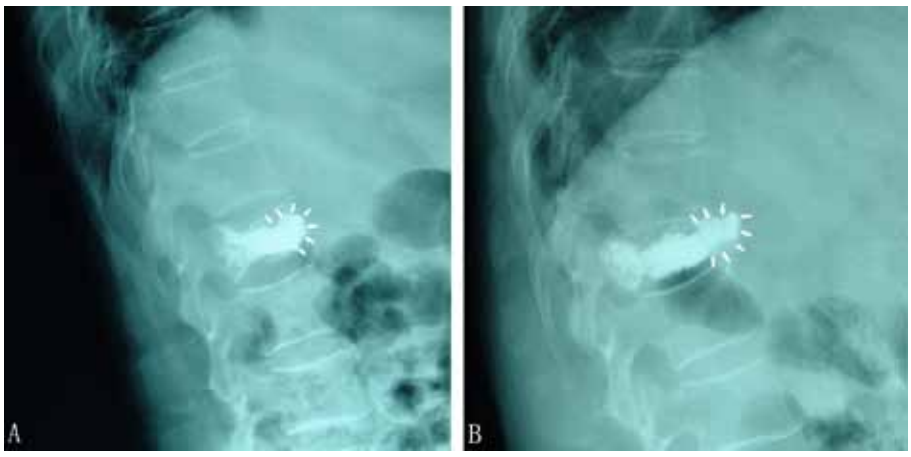

Fig. 1: (A) Too thick barrier cement (white arrows) was used to minimize anterior leakage of the cement in a 77-year-old woman with lumbar vertebral compression fractures with anterior vertebral wall destruction; (B) one week after the operation, the cement became 2 separate parts and the operation was failed.

bone cement used as a barrier should be smaller than usual, and the delayed time between the 2 injections should be no more than 3 minutes.

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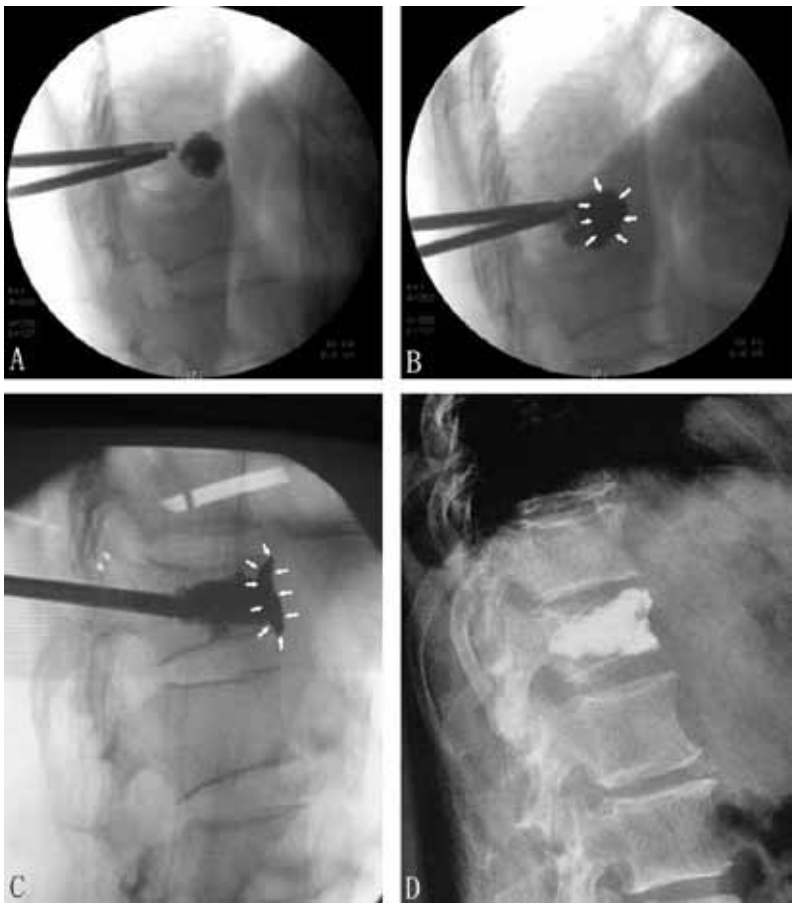

Fig. 2: (A) and (B) are cited from the original article. We can see that the cement used as a barrier (white arrows) is thicker than usual. (C) We suggest using a small amount of bone cement (white arrows) to protect against anterior leakage, just after the first filling has solidified (usually no more than 3 minutes); late-stage bone cement in the paste phase should be applied to allow the filling to diffuse evenly. (D) Then the second injection and "barrier" injected first can be integrated together as one part.

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In Response: A Better Technique?

We appreciate replying to the constructive suggestions for our vertebral augmentation method described in the "Kyphoplasty for the Treatment of Vertebral Compression Fractures in a Cancer Patient with Neurological Deficits and Anterior Vertebral Wall Destruction" (1). In applying this method to a patient with vertebral compression fracture accompanying anterior wall defect, we got a successful result in carrying out the 2-staged injection technique filling bone cement with 10 minutes delayed time.

In "Letter to the Editor," you mentioned, with figures, that a large amount of bone cement which is injected first failed to integrate with the second one and consequently moved out of the vertebral body after the procedure (Fig. 1 in the letter). And the disintegration will occur particularly when the delayed time is too long. So you suggested that 3 minutes is enough for the first injectate to solidify, and that a small volume of cement should be used.

First, we agree with your idea that 10 minutes may be too long. Although the time to solidify is influenced by several factors (component variables, mixing time, and ambient temperature) (2-5), less than 10 minutes seems enough for the highly viscous bone cement to harden within the vertebral body. In practice, the first injectate will be getting firm while you prepare for the second injection (mixing powder and liquid forms of bone cement together and inserting the mixture into the bone void filler devices), and in our case, it took about 10 minutes for the preparation.

However, we do not believe that the completely solidified "barrier" cement remains separate from the second injectate and this should be avoided. When the second injection proceeds before the first injectate gets entirely firm, it is possible that the first bone cement squeezes out the defective anterior wall. Also, our opinion about your Figure is that the second injectate was displaced backward and the restored height of the whole vertebra is decreased again. So we came to a conclusion that the performed vertebra got additional physical stress before the secondly injected bone cement solidified completely, and the injectates migrated forward and backward. Finally, we disagree with you about the first insertion volume. We think that the enough-volume "barrier" bone cement is more effective preventing against anterior displacement than the smaller one, because it has more surface area contacting with the vertebral body causing higher frictional forces. On the contrary, the smaller bone cement will tend to be squeezed out easily through the defects. We did several cases of additional vertebral augmentation on the previously repaired vertebrae, but anterior displacement of previously injected cement or separation between the 2 injectates did not happened (Fig.1).

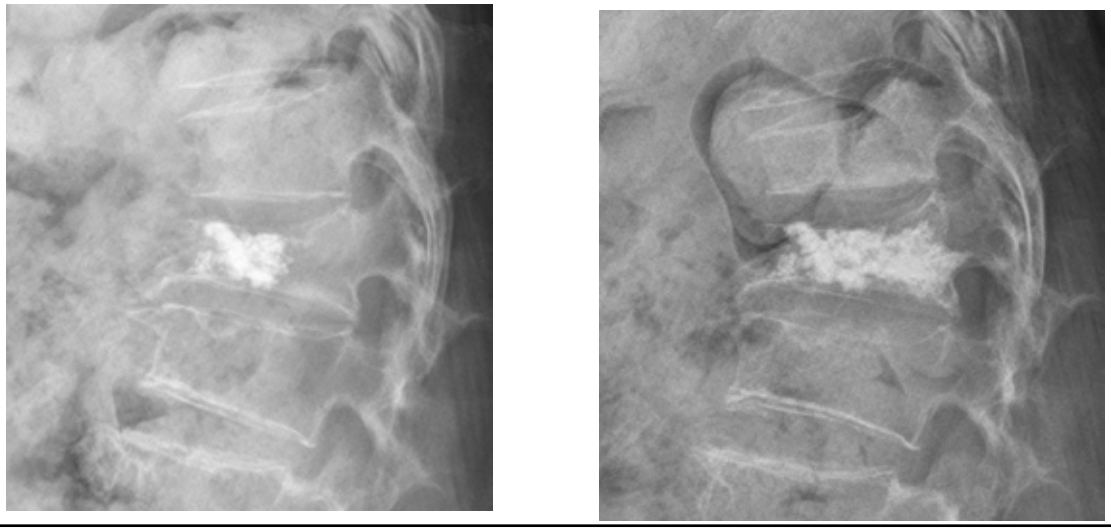

Fig. 1. *Lateral-view images of plain radiograph before(left) and after(right) the additional vertebral augmentation in the first lumbar vertebra. Neither the displacement of the previous bone cement nor the separation between the 2 injectates was found.*

In conclusion, this will be a better technique; the first injection with enough volume of highly viscous bone cement to block the anterior defect, and the later injection after the first injectate solidifies completely.

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Electronic Medical Records: Are We Going Forwards or Backwards? — A Perspective from a Private Pain Practice

To the Editor:

I am writing to you to express my deep concern and frustration with regard to the utilization of electronic medical records (EMR). I am a fellowship-trained, multi-boarded interventional pain specialist, working with other fellowship-trained interventional physicians in a private practice in Mobile, Alabama.

In preparation for the EMR mandate, our practice implemented EMR in late 2008, as did many other practices in the nation, by purchasing PrimeSUITE (Greenway Medical Technologies, Inc., Carrollton, GA) at a hefty cost of $120K hoping to become truly "paperless." Over the past couple of years, we started to see more and more physicians in our community switching to EMR as well. However, we also started to see a steep increase in the volume of paper records when seeing patients referred to us from other offices that utilize EMR.

It is ironic that when we switched to EMR, we expected to be "paperless." Instead, we see piles of useless, redundant, and disorganized EMR printouts that patients bring with them. These poorly structured files are distracting, irrelevant, problematic, and to make it even worse, the useful data are buried in a sea of white noise — patient demographics, irrelevant historical data, normal physical findings, and diagnosis/billing codes, etc. The major problem in our practice has become what to do with these EMR notes? It is excessive and unnecessary labor for our staff to scan them into our computers since we know that we will never have time to read them and that we cannot obtain any useful information from reading these hundreds of EMR printouts to help make any clinical judgment, but we cannot throw them out either.

Gradually, we also started to feel that we more or less were becoming secretaries or billers, becoming more obsessed with getting the "notes" done "right" instead of spending more time interacting with patients to offer them the individualized care they need. It is scary to see how many physicians are being converted into medical secretaries/billers since the introduction of EMR. I personally find it truly insulting to my profession as a physician when patient care becomes secondary because of constant distraction/pressure caused by using EMR when my work as a physician is outweighed by the sheer number of words I have to write for the work done as a care provider.

EMR has certainly negatively affected my practice in many ways. First of all, the clinical evaluation process has changed from a rather intellectual and rewarding one into a robot-like, clerical type daily routine, i.e., gazing at the computer screen, playing with the mouse, checking boxes, and typing. I used to enjoy dictating my clinical note as well as reading notes from other specialists. Now, I do neither. It has gotten to the point that when I see EMR notes from other physicians, I reflexively become averse to them since I know the notes are simply regurgitations of the previous medical history, previous surgical history, social history, and family history, with over 20 items of irrelevant reviews of systems, reviews that have nothing to do with what I want to know or what I should focus on to take care of my patient.

Indirectly, EMR has negatively affected the professional relationship between me and my referring physicians, as I rarely read their notes any more, and that is true! On the rare occasion when I did read their notes, I would find something like "Patient is fine. Continue current plan" buried in 4-5 pages of single-spaced, small font monster notes, with all histories and systemic reviews reviewed. I rarely call my referring physicians like I used to when I needed clarifications upon finishing reading their notes, as I no longer read them.

With the focus of health care providers turned from direct patient care to EMR note composition to justify billing, the EMR notes created are very often inflated and contain things not done, but there, therefore the reliability and validity of these EMR records are often questionable, which may create serious problems from

a medical/legal standpoint, if found to be so later on. How many times have we seen errors in an EMR from one note get copied and pasted to other subsequent notes? When you have hundreds of pages of EMR printouts that no providers read, how could you expect errors to be reduced?

So far, I have found no proof that EMR improves the quality of health care. I actually find the opposite to be true in my practice. I used to spend more time interacting with patients, performing focused physical exams, etc., but now I am constantly distracted by the simultaneous clerical work during clinical encounters. I am not surprised when hearing my patients complaining about my rushing into the exam room with a laptop, paying no real attention to their complaints, and rushing out of the room when the computer note is done. I am very nostalgic for the old days when medicine was practiced. We looked like doctors, like medical professionals or medical detectives in front of patients, rather than looking like a medical bookkeeper as is common today. I am very disturbed to see our roles as care providers be converted into servants to documentations, and that special interest people have shoveled all these down our throat, yet, we are still taking it!

With the hefty cost of EMR and the ever-increasing regulatory burden on medical practices, along with severely reduced productivity associated with using EMR, and increased patient dissatisfactions, EMR has added little value to the practice of medical care. They are from others, powerful entities that clearly have their own agenda. They are not created to save money or reduce errors. They seem to be more like lies that enable others to justify their false mandate.

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