I did an extraction yesterday that gave me some trouble (#19, irreversible pulpitis, patient didn’t want RC). I wanted to know if anyone would approach this extraction differently.

I start almost all extractions with the forceps – I know this is a big no-no on this thread, but sometimes I surprise myself and the tooth will just slip out with a little tug. Obviously, this was not the case here. About seven seconds with the forceps (I had to at least try) and then I went straight to the handpiece to section. Went for the mesial half first. This sucker was tight and the bone was extremely dense. I ended up breaking it off.

I decided to forget about the mesial for the moment and move on to the distal. Gentle luxation with the straight elevator, some patience and a little bit of prayer paid off and the distal came out fine. But it took work and patience. Like I said, dense bone here.

Back to the mesial – this was not so easy and I worked for a long time on this – long enough that I feel bad for my patient. I ended up taking out tons of interradicular bone and more than I would have liked off the buccal. It finally came out. Like I said, this took me longer than I would like to admit – more than 1.5 hours. I spoke with the patient today and he is not having much post-op discomfort or swelling. He thinks I am a hero. I’m glad he’s an easy patient.

So, where did I go wrong? Or did I? Hindsight is 20/20 and tells me that I should have been more aggressive right off the bat, but it’s hard to apply that to other situations, as I don’t want to overdo it. At the point where the tooth broke, did I follow the right course of action by removing IR bone? Is there anything else I could have done?

Hypothetically, let’s say these roots were even more splayed apart, or even a lone premolar or something where there isn’t IR bone to give you space. What’s the best way to approach this situation in dense bone? Removal on the B?

I’m looking for ideas and trying to improve. I can usually take a situation like this and learn a lesson or two that makes it so that I don’t have to repeat the experience in the future. The problem is that I can’t really see much that I could have done differently – but I don’t want to do things the same. And so I turn to you. What would you have done?

Fig. 1: Pre-op.
Fig. 2: After I took out the distal.
Fig. 3: After working on it for a while. This was an X-ray I told the assistant to take in order to give me an excuse to leave the room and do a hygiene exam (and to help myself relax a little).
Fig. 4: Final X-ray.
Divergent roots on pre-op rad = section the tooth. This is my protocol. Always run a sharp periosteal elevator and separate the gingiva. Always luxate prior to forceps. I am sure you will receive a lot of good suggestions.

My first suggestion would be to stop taking so many X-rays. I just don’t see the need here. No sinus. No third molar with the root tip in the canal or submental space. Just look in the hole, irrigate, suction and look again.

Second, try to elevate first and at least disrupt the PDL and gain a little mobility. The bleeding in the small PDL space acts a little like hydraulic fluid and expands the bone. Next, try cowhorns here. If you feel like you’re “torquing” too hard, section the tooth.

In sectioning the tooth, take a large slot out of the middle of the crown including the top of the interradicular bone, but leave the crown on. Never remove your “handle” unless it’s of no use. The idea is to remove enough to allow the crown to be elevated into this slot and “roll” the root in the direction of its curvature. If the crown breaks off at this point you should at least have enough mobility to easily retrieve the root. Sometimes you can grab the 1/2 crown with a 151 and get it out.

Similar to what Raj mentioned, create space in the PDL with a periosteal elevator/periotome/proximator and luxate with an elevator... these two things are best done prior to touching the forceps. You want to create some space and mobility first, even before you section. Try the forceps, if still nothing, then section. Given the divergent roots, it makes sense to section after luxation has been completed. If you’re going through the effort to section the roots, then I personally would go more apically in the interradicular area at the start. It looks like your initial sectioning just barely went to the furcation. If you have an instrument like a proximator or luxator, you can oftentimes get the individual roots to just pop out. Otherwise, elevator to both roots, Cryers work well for mandibular molars after sectioning. Removing IR bone made sense vs. removing the buccal bone. I’d preserve the B&L bone as much as possible.

My approach is a little different. After 10 seconds of elevator in the PDL, if it doesn’t move, especially with divergent roots, I relieve the gingiva bit around the tooth, decornate, then trough into the furcal. I can do this in five minutes – this is what is comfy for me and least traumatic for the patient.

As mentioned, with divergent roots, sectioning is pretty much a necessity. Once you got the distal root out, you could have gone to the Cryers or East/West. First swipe takes out the septal bone, second swipe gets the mesial root. Or you could have used the hand-piece on the distal aspect of the mesial root to create space, then carefully trough the mesial aspect (even at the expense of the root fragment – stay well away from #20, go slowly and check your orientation – the biggest mistake made at this point is not having the bur angled enough to the distal, better to trash the root of 19, not 20). After you have created clearance, back to Cryers or East/West to deliver the root.
I am a public health dentist so I see this kind of thing a lot. I also begin with forceps but if it feels like it’s not going to deliver, I will section the tooth. I will begin by sectioning without laying a flap and attempt to elevate each root. If I feel like I cannot elevate each root or if a root breaks, like what happened here, then the following might help.

1. Adequate flap: You don’t have to put a releasing incision for the mandible but make sure you extend it a few teeth on either side so you can see easily and keep the flap out of the way for any bone removal.

2. Trough around the remaining root so you can place your small straight elevator and elevate out the root. A Cryer’s East/West can also be very helpful here. It is less traumatic to remove bone with your handpiece than to break it off because you weren’t able to access enough of the root to elevate it out. The most destructive procedure is to continually break the root to the apex. You will end up toughing it all the way to the apex. So I remove enough bone initially so that I can get a purchase point to either elevate out the root or expose enough of the root so that I can grab it with a forceps or Rongeurs.

I find that with sectioning teeth the biggest problem is just not sectioning all the way. If you have not actually sectioned the tooth through the furcation and try to separate the two halves, you will just break off one half of the crown, leaving the root. After you section a tooth, the two halves must move independently of each other easily or you probably have not completely sectioned the tooth.

Extractions are all about getting the feel of how much you can push on that tooth before it breaks. It’s a lot less than we think. Once you get the feel, things become very easy.

On this tooth, I would have sectioned into mesial and distal halves. When you are through the furcation and feel confident it is in two halves, insert an elevator mesial to the mesial root as apical as you can and push toward the distal while pushing apically. Watch the distal half. If it also moves then the tooth is not sectioned. If the tooth is sectioned, the mesial root will move distally and occlusally. When you feel it’s loose enough, use a lower root tip forceps and wiggle it out.

If you are someone who must take a forceps from the get-go, zip off the mesial and distal contacts so you can rotate the tooth out. If you are someone who always starts with an elevator, it is still a good idea to zip away the mesial and distal contacts, otherwise you cause horizontal forces on the mesial and distal tooth.

We can all agree to disagree.

Lack of orientation is the number-one problem dentists run into when removing a tooth. I get phone calls almost weekly now from dentists who have lost their way and it is always loss of orientation. That is one reason that I am against removing the crown. Another is that if you leave the crown you can use a 151 forceps after sectioning to remove the now single-rooted tooth.