

Freak Accident

*A bur flies off inside a patient's mouth and cracks a healthy tooth—
now this Townie wants to know how and why such a thing could happen*

toothdoc87

Member Since: 04/26/16

Post: 1 of 127

Hey Townies, just about cried last week after working on a patient. A grown man cry. Was working on a crown #20, when I placed the handpiece in the patient's mouth, the bur literally snapped in half from the shaft. Keep in mind that this was a brand new barrel bur and I hadn't even touched the tooth yet. Anyways, the bur snaps at the shaft and I hear a big crack.

After I checked my drawers, I look down and see #25 snapped in half. (A beautiful virgin #25). After staring at the tooth and realizing that this was in fact reality, I immediately sat the patient up and explained what happened and how I've done this thousands of times but this was a first. Luckily the patient took it well. However, I ended up doing two crowns and a root canal for free.

Anyways, I wanted to know if this or anything freakish like this has happened to anyone? And if you were me, how would you have handled this situation? I called the bur company and spoke with the rep who tried to explain to me that this has never happened and couldn't have happened! I told her "well it did." Not sure if the bur company should bear some responsibility. Anyway, just wanted to hear some other opinions. ■

11/18/2017

benzwire

Member Since: 04/25/12

Post: 6 of 127

I'm having trouble understanding what happened. It sounds like you hit #25 with the bur as you were putting the handpiece in the patient's mount (before ever starting the handpiece). Is that correct? ■

11/18/2017

toothdoc87

Member Since: 04/26/16

Posts: 10 and 12 of 127

While holding the handpiece in position close to #20 the tooth I was about to prep, the bur snapped immediately after I put my foot on the rheostat and the barrel head went flying and happened to hit #25. ■



11/18/2017

ricklin

Member Since: 08/19/04

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I regret to inform you that this one is on you. Glad your patient is cool with you taking care of the issue.

That diamond is way too large to be used in a 1:5 handpiece. A #8 round is the largest bur that is to be used in a 1:5. Some manufacturers' limit high speed 1:5 to a #6 round.

Can't spin something that big at up to 200,000rpm or bad things happen, as you have learned the hard way. ■

11/18/2017

FEZOJ

Member Since: 11/27/12

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This doesn't make sense at all. Is it in any way possible that the tooth was broken before this incident? Did you see the bazooka hit the incisor? I had a patient who tried to blame me for

a broken lower incisor after I finished working on #18. Please provide us with an X-ray. Sorry about your bad luck! It could have been worse. What if it had injured the eye? ■

11/18/2017

First and foremost. You are doing the right thing for your patient. Bravo.

Back in the day, high speed was friction grip, low speed was latch style. Times have changed, burs and diamonds have changed with them.

The diameter of the bur or diamond is really important when we spin it at really high rpm. Do not use large diameter burs and diamonds at high rpm. I promise it will bite your backside sooner, not later. I will bet a dollar for a doughnut that there is an rpm limit for that big barrel shaped diamond. That limit is not 200,000rpm. Probably 40,000rpm or 50,000rpm. I have not taken the time to look it up, I can tell by the pic it is too damn big for high rpm.

Electric handpieces are great. It's also great that with the right electric motor you can go all friction grip for all your burs and diamonds. Makes inventory simpler, latch burs will someday be an anachronism. Way back when we needed that D-shaped shaft to keep the chuck from slipping under high load. That is no longer the case.

Technology and metallurgy have made it possible for a friction grip chuck to "do it all" with regard to high load.

You the clinician have to be aware of the rpm limits for the instruments employed. The control for your electric will allow you to set a maximum rpm. You must use the control for the electric motor to set an rpm limit for the bur or diamond in use.

Do not count on your foot on the rheostat to limit the rpm. It takes a blink of an eye to cause the bur or diamond to fly apart. And yes, that sucker is hauling ass when it breaks off the shaft. Be glad it hit a tooth, far preferable to a hole in the patient's cheek. After all it did fracture a tooth. ■

11/18/2017

ricklin

Member Since: 08/19/04

Post: 42 of 127

Others are saying, "Happens every week" and "I have had hundreds of burs break."

I have had three surgical burs break on me in 25 years and they were all in 1994–1995 when I bought some cheap ones. I might have had another 10 operative burs break and all when cutting off a crown or sectioning a bridge.

I can't wrap my mind around these other posts about burs breaking all the time

Some of you who have burs breaking all the time, can you enlighten me on how? What are you doing that causes them to break all the time? ■

11/19/2017

drtommymurph

Member Since: 04/05/02

Post: 53 of 127

$F=MA$. Wonder if the core is aluminum or steel (which is denser). We could figure the velocity (and there fore, the force) if we know the weight of the fragment as well as the angular velocity (simple physics). Finally, a real-world use for physics mechanics. An Excel spread sheet would be kind of fun.

But a bur head that size compared to a 557 fragment? I bet the force varies exponentially. ■

11/19/2017

alanrw

Member Since: 05/16/11

Post: 55 of 127

It's pretty easy for a diamond to be slightly out of balance, it's the way they are made. The large diameter instruments must be used at limited rpm.

It's not a manufacturer issue per se, it's those pesky physics. Even the highest quality burs or diamonds will do the same thing if used above their rpm limits. The cheapo imports will be more likely to fail. Anything that goes in the mouth should not come from offshore suppliers. In

ricklin

Member Since: 08/19/04

Posts: 56 and 60 of 127

this case the manufacturer's product liability insurance would have not been of help.

Offshore suppliers carry no product liability insurance, they are legally untouchable. I am speaking of items shipped in from primarily China. Not a hard and fast rule anymore though. Greedy and stupid people are now stocking and shipping these products in the U.S. The FDA reports I have read state they don't arrest the real bad guys though, just the minimum wage people they have shipping this stuff at their "U.S. facility."

It's the wild west out there, guys. If you shop for the very cheapest products, you will get what you pay for and your patient could pay the price. ■

11/19/2017

digital
Member Since: 03/29/08
Post: 61 of 127

Just to clarify this a problem for high speed electric handpieces? ■

11/19/2017

ricklin
Member Since: 08/19/04
Post: 62 of 127

No really has nothing to do with electric, it's about mass and rpm of the cutting instrument. The electric HP is "stronger" and is more likely to achieve crazy high rpm with a far too large bur or diamond. However, could have exactly the same failure with an air turbine. ■

11/19/2017

DJGatesGlidden
Member Since: 10/27/15
Post: 63 of 127

Rick,
As a fourth-year dental student. Nobody has ever touched on hand pieces/stresses/max load type of things. Do you have any concise resources for this type of stuff or is it just your experience showing as always? ■

11/19/2017

mouthjanitor
Member Since: 03/11/15
Post: 64 of 127

This thread just goes to show that we are solely responsible for knowing all about the limitations of the instruments we use, and in the case of a negative outcome where there's injury, we must show that we followed manufacturer recommendations about its use.

I've learned something from this thread because I rarely paid attention to the limitations of the burs I use. Although I get them from Komet, I never looked up the max rpms, or such. I just put them in my high speed and press all the way and get to work. I have had a few carbides break, but they broke at the neck and I saw them go right up the high vac. The times that has happened to me I can count on two hands.

And yes, I have broken almost all types of instruments. A school perio instructor (Denbo or Schlossberg) one of those guys said that you never scaled and root planed unless you broke an instrument. ■

11/19/2017



Should the bur take all the blame?

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