00:00:27 Faculty

(unintelligible)

00:00:28 Speaker 1

OK, I'm ready.

00:00:33 Speaker 1

Are you ready?

00:00:34 Speaker 2

OK.

00:00:36 Faculty

I know you’re busy

00:00:42 Faculty

This is Harry Cooper. He's 38 and he was out riding his horse today and unfortunately got thrown off the horse and got kicked in the abdomen by the horse.

00:00:52 Faculty

There was no loss of consciousness when he fell, wearing a helmet and a passerby called 999 and he was just complaining of a lot of pain in his chest and his shoulder and his right shoulder.

00:01:03 Faculty

He was brought in by ambulance.

00:01:04 Faculty

He was a trauma call, obviously and they activated the major hemorrhage protocol when he arrived.

00:01:13 Faculty

In the emergency department, he had really bad tummy pain and really bad right shoulder pain.

00:01:17 Faculty

He was hypotensive, he was tachycardic, and he had bruising on his tummy and his right shoulder.

00:01:23 Faculty

But neurology concern, no respiratory concern.

00:01:26 Faculty

He went straight for a CT scan and he had a splenic laceration.

00:01:31 Faculty

Quite a lot of blood in the abdomen and a small bowel perforation.

00:01:35 Faculty

And he's also got a right humoral fracture, which is non displaced, and they're just gonna manage conservatively.

00:01:41 Faculty

They've cleared his neck radiologically, but it's not been cleared clinically yet because he’s been asleep.

00:01:48 Faculty

So basically we took him to theatre and he had a tranexamic acid one gram in theatre and we've had another gram running. They did a midline laparotomy and they found the splenic laceration.

00:02:02 Faculty

So they've taken out the spleen, they've resected the area of small bowel that was perforated and they've reanastomosed.

00:02:08 Faculty

Everything looked fine.

00:02:10 Faculty

He's had a lot of blood, so he's had eight units of red cells, 4 units of FFP and two platelets.

00:02:18 Faculty

From an anaesthetic point of view, he was a rapid sequence induction with ketamine, fentanyl, rocuronium. So Grade 1, intubation size 7 tube tied at 22 centimetres.

00:02:30 Faculty

He's got a left internal jugular central line.

00:02:32 Faculty

He's got a left radial art line and a 16 gauge cannula in his right arm.

00:02:36 Faculty

He's got a urinary catheter.

00:02:38 Faculty

And and he had about 3 litres blood loss, we think.

00:02:43 Faculty

So in terms of drugs, he's had paracetamol about half an hour ago, so it's now about 10:00 o'clock at night.

00:02:48 Faculty

It's about half an hour ago I had the paracetamol and augmentin and metronidazole given at the same time. The last dose and I gave him 400 mics (micrograms) of fentanyl in theatre.

00:02:57 Faculty

The only other thing, he has been quite stable hemodynamically but I did notice he had some runs of the few ventricular ectopics during the case, but it's not required any treatment.

00:03:09 Faculty

So he's on propofol, he's on fentanyl, he is on a bit of NORAD, he's on 8 mills an hour of NORAD.

00:03:17 Faculty

But yeah, no problems with ventilation in here.

00:03:22 Doctor

Is he planned for like a relook?

00:03:24 Faculty

Yeah, I think 24-48 hours they'll probably come and have a look at him tomorrow.

00:03:29 Faculty

And if he's fairly stable, they they might take him back there for tomorrow afternoon, have a look at the tummy.

00:03:34 Faculty

Or they might wait another 24 hours, but tummy is completely, he's just got a dressing on.

00:03:40 Doctor

I don't hear the part in theatre, how well are his ABGs?

00:03:43 Faculty

Oh yeah, actually I've got his latest ABG, he's still got a bit of a lactate, but oxygenation is OK, acidosis is probably just lactate related.

00:03:56 Doctor

And is he peeing?

00:03:58 Faculty

Yeah, he's passed a little bit of urine.

00:04:00 Faculty

I mean, I think probably he's retaining a little bit with all of the stress and things, but I'm hoping we've caught up a bit.

00:04:08 Doctor

Do we know anything about his previous medical history?

00:04:12 Faculty

No problems, no allergies.

00:04:14 Doctor

Yeah, and how old did you say he was?

00:04:15 Faculty

38.

00:04:21 Faculty

I think he had a bit of mild childhood asthma.

00:04:23 Faculty

But he's not in any treatment for that.

00:04:24 Doctor

OK.

00:04:30 Faculty

Great I'll get back to theatre.

00:04:40 Doctor

So it's been radiologically cleared.

00:04:44 Doctor

We need him awake.

00:04:45 Nurse 1

Yes, we're going to wait till he wakes.

00:04:46 Doctor

We don't need to do a lot of work, do we?

00:04:48 Nurse 1

It's just not going in.

00:04:45 Doctor

We need to roll him

00:04:46 Doctor

We don't need to do a (unintelligible), do we?

00:04:48 Nurse 1

It's just not going in.

00:04:52 Doctor

We're gonna wait until he wakes up.

00:04:57 Nurse 1

Or the spinal team have been round.

00:04:58 Doctor

OK, so then we need to.

00:05:02 Doctor

I don't think we're going to (exobate?) him tonight.

00:05:04 Doctor

We can wait until the morning.

00:05:07 Doctor

And so then meanwhile, we will have to log on him.

00:05:13 Doctor

So, yeah.

00:05:15 Doctor

And then in in the morning, think about clearing and clinically and having a chat with the spinal team.

00:05:22 Doctor

Do we...he's had his antibiotics.

00:05:28 Doctor

What else do we want to do?

00:05:30 Doctor

And now, as you say, he's got fentanyl running, plus we're giving him regular paracetamol.

00:05:37 Doctor

Let's send routine ICU investigations from our side and let’s do a (CASS?) right now as well. And just our routine bundle.

00:05:45 Nurse 1

And shall we CT?

00:05:48 Doctor

Yeah, all of our routine bundles because we don't have any baseline IMs so let's get a routine bundle, a blood gas. Let's keep him asleep. Just, I'd like to give him a bit more fluid as well.

00:06:00 Doctor

How much has he had in theatre?

00:06:03 Nurse 1

8 units of red blood cells, 4 worth of P and two platelets. He's on (unintelligible).

00:06:07 Doctor

So OK, because he's still got a bit of a base excess.

00:06:15 Doctor

Just keep an eye on this fluid status and I am a transfusion trigger of seven will be my critical.

00:06:21 Doctor

So yeah, let's see how it goes and he's lost quite a lot of blood.

00:06:27 Doctor

I mean, there's a risk.

00:06:30 Doctor

What else, shall we just examine him?

00:06:35 Nurse 1

Yeah.

00:06:37 Nurse 2

Yeah.

00:06:42 Nurse 1

Do we have any way to write down the obs (observations)?

00:06:46 Faculty

Yes you do.

00:07:00 Faculty

I just need to get there myself.

00:07:10 Nurse 2

I just did a quick blood gas.

00:07:12 Nurse 2

Ok, yeah.

00:07:24 Doctor

He's quite tachycardic.

00:07:30 Nurse 1

Yeah.

00:07:32 Doctor

SATs are looking down.

00:07:47 Nurse 1

So his (tidal?) look like they've dropped.

00:07:55 Nurse 1

Would you be happy if I BIOS 100%?

00:07:57 Doctor

Yeah, let's go on.

00:07:58 Nurse 1

To 100%. Did you want 100%? Let's say 100% then.

00:08:12 Nurse 2

So that's holding 86 at the moment.

00:08:24 Doctor

It looks like he's got quite a bit of wheeze in his chest and he's desaturating.

00:08:29 Nurse 1

Do you want to get him to cough? See if anything has come up?

00:08:31 Doctor

Yeah can you just section him?

00:08:34 Doctor

But he definitely does have a lot of wheeze.

00:08:39 Doctor

He's tachycardic.

00:08:40 Nurse 1 (to patient)

Can I give you a quick cough?

00:08:46 Nurse 1

Is there much coming out?

00:08:46 Nurse 2

Just gonna pop him on.

00:08:49 Doctor

Again, are we at 100%?

00:08:50 Speaker 5

Continuous 100% yeah.

00:08:55 Nurse 1

Did you want to write the gas down?

00:08:57 Nurse 2

So you don't have to worry about pressing it anymore, I will do that.

00:09:01 Speaker 5

Just run a normal gas if you can later.

00:09:24 Nurse 1

CO2 gone through.

00:09:27 Doctor

He's quite tachycardic as well, isn't he?

00:09:33 Nurse 1

What did you want to do about the fluid?

00:09:39 Doctor

Let's not give him the bolus or anything, let the fluid...

00:09:42 Faculty

(unintelligible) that would be great.

00:09:43 Doctor

He has some wheeze on the right side still. Can you get the (blood) gas?\

00:09:49 Nurse 2

Yeah, gas is going.

00:09:51 Doctor

Gas is going.

00:09:52 Doctor

What's happening with the ventilator?

00:09:54 Doctor

Is he still on spontaneous?

00:09:55 Nurse

No, he's on bi level.

00:09:57 Doctor

That's tidal volumes.

00:09:59 Nurse 2

Not greater than 200, only 200, 220.

00:10:06 Nurse 1

I'll switch this font.

00:10:08 Nurse 1

Because he's not the same bi level.

00:10:12 Nurse 2

That's in the 90s. Where’s that blood gas?

00:10:16 Faculty

It's just going through.

00:10:17 Nurse 2

It's just coming through, thank you.

00:10:23 Nurse 1

We happy with current blood pressure?

00:10:37 Nurse 1

Do you want me to (unintelligible) his pressures?

00:10:42 Doctor

Um.. No let him be at 100%. He’s still tachycardic, and I'm sort of like, yeah, let's get a gas and a chest X-ray just to see what’s happening with his chest.

00:10:54 Nurse 2

Just waiting on our gas to come back.

00:11:02 Faculty

Got a gas for you!

00:11:03 Doctor

Maybe a little bit more head up.

00:11:04 Nurse 2

Got a gas here.

00:11:10 Doctor (pointing to blood gas)

And this was at 100%?

00:11:11 Nurse 2

Yeah, this was 100%.

00:11:14 Doctor

He’s been hypoxic, quite big.

00:11:24 Doctor

How's his temperature?

00:11:31 Faculty

He doesn't have a temperature.

00:11:33 Doctor

Alright, so we need to get a chest X-ray.

00:11:38 Doctor

Because it's a bit..I did think there was a wheeze but it could just be palpitations, I can't make it out.

00:11:45 Nurse 1

Do you want us to give the nebulizer or anything?

00:11:49 Faculty

I can get a nebulizer for you.

00:11:54 Doctor

It's cleared up and his chest is clear now.

00:12:03 Nurse 1

Can I sit him up?

00:12:04 Doctor

Yeah, let’s sit him up a bit, yeah. I just want to look at his abdomen.

00:12:14 Doctor

Do we have any issues with his abdomen at the moment? Other than the risk of it bleeding out.

00:12:20 Nurse 2

Pre spinal clearance.

00:12:22 Nurse 1

OK, it can't go up very much.

00:12:28 Doctor

So, he's still hypoxic. What could that be? He's had a massive amount of blood transfusion. And there's a bit of creps. I thought it was wheeze but it's added a bit of creps on either side. And it could be fluid or polluted. And that could be causing a lung injury. It could be a lung injury is what I'm thinking because I can't seem to explain the tapycardia, the hypoxia, desaturation.

00:13:00 Doctor

He still ventilating, but we need to get an X-ray with ABG which is hypoxic, still asymptotic. Lactate climbing up.

00:13:11 Doctor

So he's afebrile though, so let's send off our routine investigations and see what everything looks like.

00:13:23 Doctor

I think a chest x-ray would be...thank you.

00:13:26 Nurse 1

ECG?

00:13:27 Doctor

Yeah, let's do an ECG as well.

00:13:31 Doctor

And I think, Jenny, I think you were right. You might have to...let’s increase that pressure a little bit.

00:13:37 Nurse 1

It's high.

00:13:37 Doctor

Yeah, it was 20...

00:13:39 Faculty

OK guys, we're going to pause the scenario now.

00:13:44 Nurse 2

Those are done.

00:14:16 Doctor

Fine, so it's picked up.

00:14:21 Doctor

I think 82 is in the right place because there's equal air entry on both sides.

00:14:26 Doctor

I didn't think it dislodged.

00:14:27 Doctor

We didn't roll him, so there's no chance of it dislodging, we suctioned in that cleared.

00:14:31 Doctor

I think initially there was a bit of obstruction, because right after you suctioned the Sats picked up and whatever sort of obstruction that I heard in the in the right side of the chest have cleared up.

00:14:41 Doctor

So the ventilators back on.

00:14:44 Doctor

He's adequately...so let's nebulize him every second, hourly.

00:14:52 Nurse 2

Mm-hmm.

00:14:54 Doctor

If we can get chest x-ray...

00:14:57 Nurse 1

Take a CT while we wait?

00:14:58 Nurse 2

Yeah.

00:15:00 Doctor

That's a good idea.

00:15:10 Nurse 1

He had a history of mild asthma, didn't he?

00:15:12 Doctor

He did. I don’t know if it’s...

00:15:15 Nurse 1

An ECG?

00:15:16 Faculty

We'll get you an ECG.

00:15:22 Nurse 2

That’s all done.

00:15:25 Nurse 2

And another blood gas as well

00:15:33 Nurse 2

Still 100%, yeah?

00:15:42 Doctor

Guys when he was handed over to us, he fell off his horse.

00:15:47 Doctor

Do you think he could have...Did she give us any history of him breaking his ribs or anything?

00:15:52 Nurse 2

He said...no..he was kicked in the abdomen.

00:15:57 Doctor

Was there any particular illness in the chest?

00:15:59 Faculty

Uh, no.

00:16:02 Doctor

Well, there's no pneumothorax and chest X-ray is quite unremarkable.

00:16:06 Doctor

So I think...

00:16:10 Nurse 1

The chest, does it feel equal?

00:16:14 Nurse 1

Got a failed chest.

00:16:17 Doctor

I don't think there is.00:16:19 Speaker 4

It's the abdomen.

00:16:21 Doctor

Bilateral chest, it's moving bilaterally equally.

00:16:25 Doctor

I think it could be either there was some amount, some secretion, something blocking at that point because this improvement with the nebs.

00:16:33 Doctor

Picked up 100%. Yeah. And let's let's keep him 100%. Repeat the gas in a in a in a bit in half an hour and just have a look at how he's saturating.

00:16:44 Nurse 1

The peak pressure just shot up then.

00:16:46 Doctor

Again?

00:16:47 Nurse 1

As well, yeah.

00:16:49 Nurse 1

Now at 21.

00:16:52 Nurse 2

OK, so that's a sign to drop.

00:16:53 Doctor

Again, all right, let me just...

00:16:56 Doctor

But ECG is right actually, I can't really...

00:17:01 Nurse 1

Do you want me to try and suction him? To try and get the sat down?

00:17:04 Doctor

Yeah.

00:17:07 Doctor

It's like it's in the right position.

00:17:10 Nurse 1

Penting the tube

00:17:16 Doctor

He’s desaturating again.

00:17:19 Nurse 2

That's it, 100%, isn't it? Yeah.

00:17:21 Nurse 1

Oh yeah.

00:17:24 Nurse 1

Any other..the SEPs is 70

00:17:27 Nurse 2

OK, blood pressure dropping quite significantly.

00:17:33 Nurse 1

Do you want me to...I'm just gonna go off on the crash.

00:17:36 Doctor

OK, let me just get to the head of the bed.

00:17:39 Doctor

I think we need to call for a bit of help for someone else in a minute to just help us.

00:17:47 Nurse 1

Any extra help?

00:17:48 Faculty

I can call for help and say.

00:17:53 Nurse 2

That would be great.

00:18:02 Doctor

Put him on the water circuit.

00:18:04 Faculty

It's just behind you there.

00:18:18 Nurse 1

Do you want to keep the entire all connected?

00:18:21 Doctor

Yes, please.

00:18:21 Nurse 1

So shall we pop this back on?

00:19:04 Doctor

OK, I'm letting...just...see if there are any spasms in his chest.

00:19:15 Doctor

Ok guys, I think he's going into...could we get a crash call here? I think he's going into VT, yeah.

00:19:31 Doctor

We still have a pulse.

00:19:47 Nurse 2

Very very faint, on the left side.

00:19:53 Doctor

Ok, the chest is not moving.

00:19:56 Doctor

So would it be possible for a tension pnuemothorax?

00:20:01 Nurse 2

Yeah.

00:20:02 Doctor

But it's not moving.

00:20:05 Doctor

That would explain that.

00:20:08 Doctor

OK, so let's...we need to be decompress immediately.

00:20:16 Doctor

Just decompress him immediately.

00:20:23 Doctor

So it's on the right side, if you can pierce it in the mid particular line in the second intercostal space.

00:20:31 Doctor

We need to get some help in here as well.

00:20:33 Faculty

I've called for help.

PAUSE

00:20:48 Nurse 2

Take this off then.

00:21:02 Doctor

Ok NURSE 1 and NURSE 2 (anonymised), what do you guys think is happening?

00:21:06 Doctor

He's still not lost out, he's hypertensing.

00:21:11 Doctor

I think he is possibly peri arrest.

00:21:24 Doctor

I think we decreased air entry on the, on the right side, let's decompress him.

00:21:30 Doctor

I'll guide you through it, help is on the way.

00:21:32 Doctor

So just remove that needle.

00:21:36 Doctor

Like how you would cannula a vein and just decompress.

00:21:40 Doctor

In the mid auxillary line, second intercostal space. You do have a feel for it. Just go ahead, perpendicular.

00:22:04 Doctor

Just push the needle in, NURSE 1. There we go, there we go. Do we hear a hiss?

00:22:17 Faculty

You do.

00:22:17 Doctor

OK, alright.

00:22:19 Nurse 2

Sats are coming back up.

00:22:25 Nurse 1

Did you want me to have another listen to the chest?

00:22:27 Doctor

Yes, please. Yes please.

00:22:31 Doctor

What do you think about the pulse? Do you still feel a strong...

00:22:36 Nurse 2

Yep, still strong, tacycardic.

00:22:40 Doctor

It still looks like he's in...VT.

00:22:51 Doctor

Ok, he's coming back.

00:23:03 Doctor

What do you think, NURSE 1?

00:23:14 Nurse 1

(long pause) Yeah, I think I can hear something. It’s just much more quiet. Still a wheeze.

00:23:19 Doctor

Right, OK. All right.

00:23:22 Doctor

We have chest movement.

00:23:24 Doctor

And so I'm still not happy with his with with the, with the heart rate or the rhythm.

00:23:30 Doctor

And he's still potentially, I think he can arrest.

00:23:34 Doctor

We need to get someone in to put in a chest drain... is any help on the way?

00:23:40 Faculty

Your help will come put the chest drain in, yeah.

00:23:43 Nurse 1

Alright. Is there any drugs you want us to give for the heart rate?

00:23:53 Doctor

Um...umm....

00:23:57 Faculty

So the consultant is just coming in, she's just coming.

00:23:59 Doctor

OK.

00:24:00 Doctor

Before we do that, can you just tell what you can see in the ventilator? What his airway pressure is?

00:24:06 Nurse 1

Do you want us to reconnect?

00:24:21 Doctor

So 100% fiO2.

00:24:29 Nurse 2

Just seeming a lot better now.

00:24:32 Nurse 1

Yes, so the volume 415, pressure 22.

00:24:39 Doctor

Air pressure slipped by.

00:24:44 Doctor

So we need to get a definitive chest drain in there.

00:24:48 Doctor

Can we come down on the peak please?

00:24:51 Nurse 1

Back to 18.

00:25:00 Doctor

What do you think about the the heart rates?

00:25:03 Doctor

What do you think we should?

00:25:06 Doctor

It doesn't look like VT now to me.

00:25:08 Doctor

No, it looks like it's defib.

00:25:10 Nurse 1

Yeah. Can we get (unintelligible) in to help?

00:25:15 Nurse 1

What was his potassium on there?

00:25:22 Nurse 2

On the last one, potassium is 5 on the last scan.

00:25:26 Doctor

OK, now guys, let's get the crash cart.

00:25:30 Doctor

Yeah, we're gonna have to shock him.

00:25:31 Doctor

He's losing output. Can’t feel a pulse. Get the sticky pads.

00:25:41 Doctor

Alright, so let's just start, someone needs to start chest compressions.

00:25:44 Doctor

NURSE 2, could you start compressions?

00:25:54 Doctor

We get the bed down to CPR position, yes.

00:26:08 Doctor

Compressions and NURSE ONE, are you happy to be in charge of the defibrillator and so to give instructions for Defibrillation?

00:26:17 Nurse 1

Yeah, I've not used this one before.

00:26:20 Doctor

Are you confident about it?

00:26:35 Doctor

Continue CPR, do not stop chest compressions. Is more help coming on the way?

00:26:39 Doctor

We definitely need help.

00:26:42 Faculty

We have called for help, this is all we have. I can assist if you want me to.

00:26:46 Doctor

OK, can we put out a crash?

00:26:48 Doctor

A resus pool?

00:26:55 Doctor

Do you want to just pause for a minute to have...have you connected?

00:27:04 Nurse 1

I am not 100% confident.

00:27:06 Doctor

Do you do you have to charge?

00:27:07 Faculty

Yeah, level 1.

00:27:12 Doctor

Do you want me to take over (compressions) now?

00:27:14 Nurse 1

Yes, thank you.

00:27:16 Doctor

Have you done the ventilator?

00:27:22 Nurse 1

We've got no sats at the moment.

00:27:25 Doctor

So alright, so then someone's gonna have to bag him.

00:27:28 Nurse 1

I'll bag him.

00:27:29 Doctor

Right, OK, it's 100%.

00:27:31 Doctor

We're doing CPR, the pads are connected.

00:27:40 Doctor

Once NURSE ONE starts bagging him, NURSE TWO what you need to do is pause very briefly when I tell you do to then start...to have a look at the rhythm and then deciding what we're gonna miss.

00:27:58 Doctor

Do we have our emergency drugs with us?

00:28:00 Faculty

Yes, so emergency drugs are in the 3rd drawer.

00:28:09 Doctor

I'll just get the drugs ready.

00:28:17 Doctor

Do we have a pulse, guys?

00:28:22 Nurse 2

No pulse.

00:28:24 Doctor

And this looks like.... still looks like defib. Alright, continue.

00:28:29 Nurse 1

Are you happy to cpr?

00:28:34 Doctor

I can continue if you want.

00:28:36 Doctor

We will switch into and what I'm going for is I'm going to charge.

00:28:40 Doctor

And then when I say clear, yeah, you need to step away.

00:28:45 Doctor

And then when I when I say everyone clear.

00:28:47 Doctor

We need you to step away.

00:28:49 Doctor

It will deliver the shock and then get back on the chest.

00:29:07 Doctor

Oh, it's charged.

00:29:08 Doctor

Clear, everyone clear.

00:29:12 Doctor

Right back on the chest.

00:29:15 Doctor

We're gonna do this for another 2 minutes, so the clock's on.

00:29:21 DEFIB AUTOMATED VOICE

Release pressure between compressions.

00:29:29 Nurse 1

So obs-wise, that's 96.

00:29:32 Doctor

OK, just pause for a minute, just to see if we have sinus.

00:29:35 Doctor

So looks like we have sinus rhythm.

00:29:37 Doctor

Do we have a pulse?

00:29:40 Nurse 2

We have a pulse, yeah.

00:29:41 Doctor

OK, so we have sinus rhythm, great.

00:29:44 Doctor

So like I said, looks like you have went into one episode of...

00:29:49 DEFIB AUTOMATED VOICE

15 seconds without sign of compressions.

00:29:51 Doctor

OK, so let's just switch this off.

00:29:58 Doctor

Alright, so looks like we're back in sinus rhythm.

00:30:01 Doctor

Were you able to bag?

00:30:02 Nurse 1

Yeah.

00:30:04 Doctor

Blood pressure is back.

00:30:05 Nurse 2

Pulse is high.

00:30:21 Nurse 2

Yeah, we've got air entry equal on both sides, the right side is a bit...

00:30:27 Doctor

Right, it will be a bit less.