00:00:08 Faculty

Hi guys, are you the night team, yes? Great. Hi, I'm the theatre anaesthetist for today. I just brought around Harry Cooper from the Trauma Theatre.

00:00:16 Faculty

I hope you don't mind I've connected him to the fenton things. So Harry's 38, and we've just been in the emergency theatre. And basically he's a polytrauma from this afternoon.

00:00:26 Faculty

He's got a bit of childhood asthma, doesn't take any inhalers, but otherwise and fed him well and and no allergies.

00:00:32 Faculty

And basically, he was out riding his horse at about 4:00 o'clock this afternoon on a country lane, and the horse bucked, and then he was thrown from the horse and got kicked in the tummy. And then there was a passerby. He called 999.

00:00:46 Faculty

No loss of consciousness at the scene, GCS 15 throughout, and actually all the way through to the ED as well. But he had complained of severe abdominal pain and right shoulder pain.

00:00:58 Faculty

When he came in, his blood pressure was a bit low. He was tachycardic, obvious bruising to the tummy, and also the right upper arm.

00:01:06 Faculty

His lactate was four in ED, Hb was 13 on his initial gas. Chest fine, no neurological concerns. So he went for a CT, which showed a splenic laceration and lots of blood in the abdomen.

00:01:19 Faculty

And a small bowel perforation. And he's also got a humoral shaft fracture, but it's non displaced. So we didn't want to do anything about that at the moment.

00:01:27 Faculty

C spine's been cleared, radiologically and CT chest and head as normal.

00:01:32 Faculty

So basically, he was a trauma call and activated the major haemorrhage protocol.

00:01:36 Faculty

He had one gram of antranexamic acid in the ED and we've got infusion running now and after his CT he went straight to theatre, had a trauma laparotomy, midline laparotomy.

00:01:46 Faculty

Definitely splenic rupture, so they've removed the spleen, washed out all the blood.

00:01:52 Faculty

They had to resect a segment of small bowel.

00:01:54 Faculty

And they've done a primary anastomosis because otherwise it was OK. They've left his abdomen open and he's all dressed there. He's had a three litre blood loss intheatre, two litres of heartmans.

00:02:06 Faculty

8 units of red cells, 4 FFP and two platelets. So 8 red cells, 4 FFP, 2 platelets.

00:02:16 Faculty

Anaethesthic wires, he was induced with ketamine, rocuronium, fentanyl. He's a Grade 1 intubation, size 7 tube tied at 22 centimetres. He's got a left internal jugular line.

00:02:26 Faculty

He's got a radial arterial line, so a couple of cannulas.

00:02:32 Faculty

And a catheter. I gave him paracetamol about 9:30. So about half an hour ago. And he also had augmentin and metronidazole towards the end of the case because we had given them at the beginning. He's had a total of 400 micrograms of fentanyl in theatre. And I've seen a few ventricular ectopics interoperatively but not been unstable at all and hasn’t needed any treatment.

00:02:54 Faculty

So I think the plan is probably to go back to theatre tomorrow to have a look at the anastomosis and consider closing the tummy. But obviously worried about abdominal pressure.

00:03:04 Doctor

So the head's been cleared? Yep, the C spine has been cleared radiologically? So he's no collar?

00:03:10 Faculty

Exactly, but we, you know, you need to treat him with caution because obviously it needs to be cleared clinically when he was awake.

00:03:16 Doctor

Have we got a yellow form?

00:03:18 Faculty

Oh, we don't actually have one, sorry.

00:03:21 Faculty

There's no concerns. We just don't have a clinical clearance.

00:03:29 Doctor

And chest tube, has that been in the right place?

00:03:31 Faculty

The...have we got an X-ray? Yeah. We've had an X-ray and that was in the right position.

00:03:37 Doctor

Yeah. OK. And chest, you were happy with.

00:03:39 Doctor

Tummy, had his spleen and small bowel.

00:03:46 Doctor

Did you check, did he have his full spine checked?

00:03:49 Faculty

Yeah, he was on when he arrived and that was fine.

00:03:52 Speaker

And neurologically, he was moving all four limbs?

00:03:53 Faculty

Yep, moving all four limbs.

00:04:01 Doctor

Fine. And is there anymore blood?

00:04:02 Faculty

That's his latest blood gas. There is more blood available if required, more of everything if you need it.

00:04:07 Doctor

Perfect.

00:04:11 Doctor

If you see the trauma surgeon send him back our way with our yellow form.

00:04:13 Faculty

No problem.

00:04:23 Doctor

Ok, NURSE 1, are you bedside nurse?

00:04:23 Nurse 1

Yeah, yeah, I'm happy to be bedside.

00:04:27 Nurse 2

Shall I start doing our assessment?

00:04:29 Nurse 1

Yeah, sure.

00:04:31 Doctor

Yeah, do your ABCDDE assessment.

00:04:35 Doctor

Do you want to start taking some bloods, sounds like we've got blood, if you can ring the lab and find out what we have.

00:04:41 Nurse 2

Yep.

00:04:44 Doctor

So gas, bloods.

00:04:48 Speaker 4

That would be great, perfect and I'll have a look at all this.

00:04:55 Nurse 1

Hi Harry, my name is NURSE ONE and I'm just going to do a little assessment on you, if that's alright.

00:05:03 Doctor

Hb of 108.

00:05:08 Doctor

So what we'll do is, the lactate what we've got to be thinking about with the lactate is he under resuscitated? Is there something aschemic that we've missed?

00:05:21 Doctor

So for example, his anastomosis or are we missing compartments or something like that. Make sure you have a feel.

00:05:27 Nurse 2

I'll drop the pressure as well.

00:05:33 Doctor

He's got an open abdomen, so that won't make a difference.

00:05:34 Nurse 1

Have a good feel of his peripheral circulation?

00:05:38 Doctor

Yeah his calves, his arms, his tummy, well not his tummy like we said.

00:05:45 Doctor

And what we'll do is we'll give a fluid bolus...if we find he's peripherally shut down and then we'll repeat the gas and see if the lactate is coming down.

00:05:56 Nurse 2

Did you say about his urine output?

00:06:00 Doctor

No, it's often not that accurate, actually, when the abdomen is open. So we'll see what the trend is.

00:06:14 Doctor

So he's had antiobiotics.

00:06:17 Nurse 2

I’m just gonna take some blood.

00:06:19 Doctor

Sats are 91.

00:06:24 Doctor

Do you mind if I have a quick listen to his chest?

00:06:28 Nurse 1

You're on the gas, shall I just carry on with my assessment?

00:06:37 Nurse 1 (to patient)

Just gonna open your eyes for a second.

00:06:39 Doctor

I’ll just have a listen.

00:06:40 Nurse 2

Was there anything else you wanted on the blood?

00:06:44 Doctor

Uh...amalase.

00:07:01 Nurse 1

Volumes are 300 now.

00:07:11 Faculty

Done that gas for you.

00:07:16 Doctor

Ok and the tube, can you see what that's at?

00:07:19 Faculty

That's at 22.

00:07:21 Doctor

Fine. OK, so he's wheezy and and we know he's an asthmatic, don't we?

00:07:27 Doctor

And he's wheezy on both sides now. This might be asthma, or it might be that we have fluid over, or he's got a RDS or he's got trally or whatever.

00:07:37 Doctor

So let's start off by giving him a nebulizer as we would normally do.

00:07:41 Nurse 1

I’ll get that.

00:07:43 Doctor

So let's give him 2.5 mg of salbutamol nebulized.

00:07:54 Faculty

2.5 of salbutamol?

00:07:54 Faculty

2.5 of salbutamol?

00:08:01 Nurse 1

So volume, I think we're at around 500. They dropped down to what they are now. I went up from 18 to 20. They had been 400 and now they're 300.

00:08:12 Nurse 1

CO2 is 7.4, this is the new one

00:08:15 Doctor

So the tidal volumes will drop on the gas, on the nebulizer anyway, won't they?

00:08:20 Faculty

No it would be more.

00:08:21 Doctor

They would normally increase? OK, fine.

00:08:26 Doctor

OK. And we've got CO2 recently that looks very bronchospastic, doesn't it? OK, let's look at this gas like you say.

00:08:34 Doctor

So Ph 7.21, and, while we're reading through this, would you mind getting requesting a chest X-ray or actually let's just get the on up that we had and have a quick look at that first.

00:08:47 Doctor

So pH 7.21 so he's acidotic, PCO2 is up slightly. PO2 7.4, that was probably on the original oxygen, wasn't it?

00:09:00 Nurse 1

Yep.

00:09:04 Doctor

Hb's 110, potassium 5, calcium is alright at 1, we'll need to keep an eye on that, glucose 8.4, lactate 4.2, what was it on the last one, 3 point?

00:09:23 Nurse 1

3.6, he's has bowel surgery hasn't he?

00:09:26 Doctor

Base Excess has gone up.

00:09:29 Doctor

So while we're looking this X-ray would you mind, let's just get a 500ml bolus of fluid.

00:09:36 Doctor

Let's give him that. See what what does to his lactate.

00:09:44 Nurse 1

Did say 500 there?

00:10:04 Nurse 1

So do you want that 500 mil bolus to go through?

00:10:07 Doctor

Yeah, I mean, he, I mean the only concern is chest and why he's wheezy but I think we need to see if the lactate comes down with that fluid.

00:10:15 Doctor

So let's do that. Looking at this X-ray, so ET tube looks like it's above, so that's not the cause of the bronchospasm.

00:10:23 Doctor

And then...what's happened there?

00:10:30 Doctor

Oh, tubing. So we've got central line on this side. That looks like it's in an OK position.

00:10:41 Doctor

We've got an Ng Tube there, we've got ECG leads. Not sure what that is but it's tubing.

00:10:50 Doctor

That looks, what is that?

00:10:54 Doctor

Is that a pick line or some sort of (unintelligible)?

00:11:01 Faculty

I think that might just be an ECG lead.

00:11:02 Doctor

OK, fine. And there's also some sort of graft, I don't know what that is. Is that a graft?

00:11:13 Nurse 1

We've got bruising to this side and a fractured humor.

00:11:15 Doctor

OK, right. Let's look at the ribs then.

00:11:22 Doctor

They said it was all clear, didn't they?

00:11:27 Doctor

And I can't see anything there.

00:11:41 Doctor

Perhaps some loss there on the right hand side, but other than that the lung fields don't look too bad.

00:11:47 Doctor

OK, so let's go back and review things.

00:11:54 Nurse 1

I'll just change that 100, yeah?

00:11:57 Nurse 2

He's had a neb, hasn't here?

00:11:58 Nurse 2

Do you want any anamophalin or (unintelligible)?

00:12:01 Doctor

So we've put him on 100% oxygen, we've got low tidal volumes.

00:12:06 Nurse 2

Sats are 80 now.

00:12:10 Nurse 1

His peak pressure isn't that high.

00:12:11 Doctor

Yeah, put his peak pressure up to 28. I'll just have another listen and yeah.

00:12:25 Nurse 2

Sats are 71.

00:12:34 Nurse 2

Got a map of 51 as well.

00:12:37 Nurse 1

Have we got any norad?

00:12:38 Nurse 2

Yeah, we're on 8 mills of norad.

00:12:41 Doctor

OK, trachea central.

00:12:44 Nurse 1

He's going into VT.

00:12:47 Nurse 2

Yeah, just had a bit of a run.

00:12:55 Doctor

Being deviated to the left. OK, yeah, fine and tension.

00:13:01 Doctor

So hyper resonant there after that site so can only assume that this is a tension pneumothorax. Do you want to get a large 4 cannula?

00:13:15 Doctor

And the crash trolley just in case.

00:13:34 Nurse 2

So we’re in VT. Have we got a chest drain?

00:13:41 Faculty

I can get you that.

00:13:47 Doctor

OK. Cannula going in.

00:13:49 Doctor

Did that hiss?

00:13:51 Faculty

It did.

00:14:01 Doctor

Are we in BT? Yes, let's see if we've got a pulse.

00:14:08 Nurse 2

Shall I leave the peep at 5?

00:14:11 Doctor

2 seconds. OK, so we've got a pulse, so it's pulse VT. What did you say sorry?

00:14:15 Nurse 2

It only peaks at 5. His sats have to come up.

00:14:21 Doctor

Ok fine, so pulse VT and we have 100% oxygen. So it's the same principles as last time. So let's do a gas and find out what his electrolytes are. And he's got a compromised blood pressure, we're giving fluid, correct?

00:14:34 Nurse 1

Yeah, 500 going in.

00:14:36 Speaker 1

And we are on 9.4 mils of norad, gone up a little bit.

00:14:43 Doctor

That 10 second thing, right. So taking the gas for electrolytes, pulse VT, let's get our algorithm out because I feel better with an algorithm.

00:15:00 Doctor

And I guess the same thing again will be that we'll do some synchronised shocks but we've got time to get the gas back, haven't we?

00:15:07 Doctor

Let's get the amiodarone like you say.

00:15:13 Nurse 1

Shall I get the volumes of it, 600?

00:15:14 Doctor

Yeah let’s do that.

00:15:20 Doctor

Let's aim for, we'll calculate his proper, ideally tidal.

00:15:26 Nurse 1

I've got the gas do you want me to call it out?

00:15:28 Doctor

Yeah go on.

00:15:30 Nurse 1

pH, 7.28, PCO2 is 7.4 PO2 is 9.2, Hb is 108, Sodium is 137, Potassium is 4.9, Calcium is 1, croys 119, glucose is 8.2 and lactate is 4.3.

00:15:48 Doctor

Would you be able to call the consultant and ask him to come down and can you also call, is it the middle of the night?

00:16:02 Faculty

It is, yes.

00:16:05 Doctor

If we could ask the consultant to come in and also could we let the trauma surgeons know that the patient's deteriorated just so they can come and be here?

00:16:15 Faculty

So you want to come and assess him?

00:16:17 Doctor

Yeah, please.

00:16:19 Doctor

Just tell you him he's unstable and I can't come to the phone. If they can come down that'd be brilliant.

00:16:23 Doctor

OK, so electrolytes are alright on that.

00:16:31 Nurse 2

Did you want to continue with (unintelligible)?

00:16:35 Doctor

Yes let's do that and we'll just have to assume this is asthma for the moment.

00:16:42 Doctor

Because the X-ray from just now looks ok. So I think we should give him some steroids, would that affect in any other way?

00:16:55 Nurse 1

Possibly with his wound healing from his surgery.

00:16:58 Doctor

The other question is, is this anaphylaxis and are we giving him something that he could be having an anaphylaxis to?

00:17:07 Doctor

Have we lost him now?

00:17:08 Nurse 1

Yeah.

00:17:10 Nurse 1

Got no pulse.

00:17:25 Doctor

Ok we're doing compressions, shall we put him on the water circuit, perfect, and and I think we were, he was in VF, so we should be able to do a shock.

00:17:38 Doctor

Should we put the, we have not enough people, so let's put the cardiac arrest call out and we had called for consultant.

00:17:43 Doctor

Yeah. So OK, so is everyone happy if I do a shock?

00:17:54 Doctor

You've got a full circuit there, oh wait no you haven't.

00:18:00 Doctor

Just close the APR bar. Do you know what they mean by that?

00:18:05 Doctor

It's just to do with the oxygen supply.

00:18:12 Faculty

The ITU consultant is on a call, they want to talk to you.

00:18:17 Doctor

Just tell him we're in a cardiac arrest, I can't speak til they come in.

00:18:20 Doctor

Right. OK. So I think it's safest if we just disconnect, yeah.

00:18:30 Doctor

You just disconnect, so if you disconnect now.

00:18:36 Doctor

And I'm going to charge, just keep doing compressions.

00:18:44 Doctor

OK. And stop doing compressions, everyone stand back, top middle bottom, shocking.

00:18:53 Doctor

Right. And then you can reconnect. Perfect. OK.

00:18:58 Doctor

Are you OK to time? So 2 minutes from now.

00:19:03 Doctor

We've just given a shock, we'll be giving adrenaline on the third shock if that's alright.

00:19:10 Doctor

And we need to do a gas don't we, not enough people to do that. So let’s um... could you time? Just gonna do the gas.

00:19:20 Nurse 2

I have got some kind of blood pressure and rhythm by the way.

00:19:30 Doctor

So when we next stop doing compressions. I'm gonna listen to the chest, make sure we haven't got a tension pneumothorax again.

00:19:41 Faculty

It's coming up to two minutes coming up to on 2 minutes now

00:20:08 Nurse 2

I can feel a pulse.

00:20:08 Doctor

We're still wheezing.

00:20:16 Doctor

Right. Let's just get back to where we are, so you can put him back on the ventilator.

00:20:23 Doctor

He's still wheezy, so we'll keep giving back-to-back nebulizers. My concern is why he's so wheezy. Yes, he's an asthmatic but is he having an anaphylaxis to something?

00:20:36 Doctor

Let's stop the transamic acid in case that could be the cause and let's give him 50 micrograms of adrenaline to see if that does anything.,