00:00:16 Faculty

Are you the night team? Yeah, great. I've got to get back to theatre. Sorry. I'm Laura. I'm the anaethetist.

00:00:22 Faculty

Just bringing round this chap. He's come from theatre to the ED to here so I don't know if any of you have met him before?

00:00:28 Faculty

He's called Harry Cooper. He's 28 and basically, he's a polytrauma patient from this afternoon.

00:00:34 Faculty

Normally bit unwell, he had a bit of a childhood asthma, but he doesn't take any inhalers now and he's not got any allergies.

00:00:40 Faculty

So basically, he was out riding his horse about 4:00 o'clock this afternoon on a country lane, and the horse bucked when the car went past, through him off. And then the horse kicked him in the tummy.

00:00:50 Faculty

And a dog walker who was passing by called 999.

00:00:53 Faculty

No loss of consciousness. He's been GCS 15 right from the beginning.

00:00:58 Faculty

But when he was brought into the ED, he was complaining of severe abdominal pain and right shoulder pain. He was a bit hypotensive and a bit tachycardic when he came in.

00:01:07 Faculty

And he had obvious bruising with abdomen on his right upper arm. So he went for a CT abdomen and a trauma series, and he had a splenic laceration with extensive blood in the abdomen. And a small bowel perforation.

00:01:24 Faculty

And the X-ray of his right upper arm showed a humoral shaft fracture, but that's non displaced, so they don't want to intervene with that at the moment.

00:01:32 Faculty

His lactate was 4 when he first came in, HB was 13 and he didn't have any blood products in ED. C spine had been cleared radiologically and the CT head and chest are normal, so he was a trauma call. Obviously reactivated the major haemorrhage protocol. And he had a gram of tranexamic acid in the ED and the 2nd gram is running.

00:02:00 Faculty

He came to theatre from the emergency department. Had a trauma laparotomy with a midline incision. They found a small bowel rupture and sort of small bowel perforation.

00:02:10 Faculty

And the splenic rupture. And they took the spleen out, lots of blood clot. They think about 3 litres of estimated blood loss and and they've reanaastamosed the small bowel having resected the perforated component. So product wise he's had three litres of...2 litres of crystalloid he's had eight units of red blood cells, 4 FFP and two platelets in total. So 8 red cells 4 FFP and 2 platelets.

00:02:38 Faculty

He had the general anaesthetic with the ketamine and rocuronium induction. It was a Grade 1 incubation with a size 7 tube tied at 22 centimetres at the teeth.

00:02:48 Faculty

You've got a left internal jugular central line and left radial art line. Couple of cannulas and a urinary catheter, he has been passing urine.

00:02:59 Faculty

They gave him paracetamol at 9:30 PM, so about half an hour ago. And he also had augmented and metronidazole towards the end of the case, so again about half 9 because we didn't give them at the beginning.

00:03:11 Faculty

He's had 400 mikes of fentanyl in theatre and he's doing pretty stable, but there have been a few ventricular ectopics interoperatively but not sustained and no treatment required for that.

00:03:23 Faculty

So obviously, I kept him intubated, tummy's open. They'll probably take him back to theatre tomorrow, but they were just worried about swelling and abdominal compartment syndrome.

00:03:32 Faculty

So, that's why they left him open for tonight and got an ECG. That's from admission. And this is his latest gas from theatre.

00:03:43 Faculty

Is there anything else you would like to check?

00:03:46 Doctor

It was Harry, is that right?

00:03:47 Faculty

Harry Cooper, yeah.

00:03:49 Doctor

And he was kicked by a horse?

00:03:50 Faculty

Yeah, he was riding the horse.

00:03:52 Doctor

Then thrown off and then kicked?

00:03:53 Faculty

Then kicked in the abdomen.

00:03:55 Faculty

Yeah, head fine.

00:03:57 Doctor

C spine ok?

00:04:00 Faculty

C spine fine radiologically but obviously they'll want it clear it clinically.

00:04:08 Doctor

OK. Any other questions from you guys?

00:04:11 Nurse 1

No allergies or anything?

00:04:12 Faculty

No allergies, just childhood asthma.

00:04:16 Doctor

Great. OK, great.

00:04:17 Faculty

Thanks very much.

00:04:24 Nurse 1

I can start doing all the initial assessments.

00:04:29 Doctor

Yeah, that's alright.

00:04:36 Nurse 1

Harry. Harry. Nice to meet you. I'm one of the intensive care nurses. I'm with one of my colleagues, we're just going to check you over. We've got you back from theatre, ok?

00:04:53 Nurse 2

Pupils are equal and reactive. Check the teeth.

00:05:19 Nurse 1

He looks like he's got a little bit of an expiratory wheeze going on.

00:05:24 Nurse 1

So I might need to address some nebs.

00:05:26 Nurse 2

I can get some nibs for you after I've finished the obs.

00:05:28 Nurse 1

Thank you.

00:05:34 Nurse 2

Yeah, quite bad.

00:05:38 Nurse 2

Exposed tummy. OK, so dressing is clean and dry. No signs of bleeding around the thing with the...

00:05:51 Nurse 1

Wonderful. Is he warm?

00:05:54 Nurse 2

Yeah.

00:06:00 Nurse 2

And that is Hartmans, lovely.

00:06:05 Doctor

Is it possible that you might be able to run another gas for me?

00:06:07 Nurse 2

Yes.

00:06:11 Nurse 1

Just do the gas and then pop it out.

00:06:17 Nurse 1

Do you mind running that gas for me? Thanks very much.

00:06:23 Doctor

So that's CO2, it said he was 22 (unintelligible) and he's still 32. Can you turn the oxygen up?

00:06:40 Nurse 1

I’ve popped that up a little bit.

00:06:42 Nurse 2

Do you want me to check temperature?

00:06:44 Nurse 1

If you wouldn’t mind.

00:06:47 Nurse 1

So slightly more acidotic. CO2 is rising a little bit. His PO2 is 7.4.

00:06:53 Doctor

Shall we go up a bit more on the oxygen?

00:06:55 Nurse 1

70%, CO2 6.8

00:07:03 Doctor (to patient)

Let me have a quick listen to your chest.

00:07:06 Nurse 1

Sats 84, so we're dropping on the tidal volumes a bit more than we were.

00:07:12 Nurse 1

So I'm just going to go up...

00:07:13 Doctor

You've got this salbutamol neb?

00:07:15 Nurse 2

Yeah, I'll go get them.

00:07:19 Faculty

How much salbutamol neb do you want? How much do you want?

00:07:22 Nurse 2

Can I have....

00:07:24 Doctor

Get 5 milligrams of salbutamol.

00:07:28 Faculty

Ok, I’ll get that.

00:07:29 Doctor

Got a wheeze in the trachea.

00:07:34 Nurse 1

He's interbreathing a little bit. I'm just going to give him a bit of a bolus.

00:07:37 Doctor

The treachea feels a little bit over to one side.

00:07:41 Faculty

Trachea is ok.

00:07:46 Nurse 1

That's working sufficiently just in case we need it at all.

00:07:50 Doctor

OK, so resonance is fine there, OK?

00:07:53 Faculty

Just connecting the...

00:07:56 Doctor

So salbutamol, I think we'll want to give back-to-back salbutamol.

00:08:01 Nurse 1

Yeah. So currently on the ventilator, we have tidal volumes of 439, right they're intermittently dropping. We've got 90% sats.

00:08:13 Nurse 2

You're gonna give it back-to-back?

00:08:14 Doctor

Yeah.

00:08:17 Nurse 1

What else? So we're giving a salbutamol neb.

00:08:22 Doctor

So let's just see...

00:08:23 Nurse 2

So slightly more improved, yeah.

00:08:26 Doctor

I think it might be worth thinking about sort of tracheal magnesium. Bedside...

00:08:32 Doctor

Do you want to tropium 500 mikes, actually. Let's add that into the next yeah, if you can just get some magnesium, I think it's yeah, 2 grams

00:08:34 Nurse 2

Magnesium, yeah.

00:08:47 Doctor

We're trying to get this thing prepped up.

00:08:55 Doctor

Whilst we've got this period of stability, maybe a chest X-ray, if I request it on the system is someone able to...

00:09:01 Nurse 2

Absolutely. Are you sorting the magnesium?

00:09:03 Nurse 2

Yeah. I'm gonna put the magnesium in.

00:09:05 Nurse 2

I'll call a chest X-ray.

00:09:11 Doctor

I assume I can't actually request it on the system?

00:09:17 Nurse 2 (on phone)

Can we get access to the on call chest X-ray please? Thank you very much.

00:09:35 Nurse 2 (on phone)

Would you mind popping up? Have a bit of an emergency, that would be wonderful.

00:09:41 Faculty

Just gotten the chest X-ray.

00:09:45 Nurse 1

The picture will be available on the screen any minute.

00:09:50 Doctor

Right, ET is in a good place, central line is in a good place.

00:09:52 Nurse 2

Just come back down off the peak quite a bit.

00:09:55 Faculty

So what are we on now? 72%.

00:09:57 Nurse 2

Yeah, just weened it down.

00:10:09 Nurse 1

I haven't done all the obs yet...

00:10:11 Nurse 2

OK, fine. I'll carry on with an assessment just in case. And we can do another gas.

00:10:17 Nurse 1

Yes, just checking his drains.

00:10:21 Doctor

So a little bit of fluid at the right base. That’s nothing to worry about.

00:10:24 Nurse 1

Great. I'll just come down a bit with the oxygen.

00:10:27 Doctor

Have we done the admission bloods for him?

00:10:31 Nurse 1

We did it...

00:10:33 Doctor

Did you do the blood gas?

00:10:37 Nurse 1

So we're dropping our tidal volumes again and he's also interbreathing.

00:10:42 Doctor

Let's see where we are with that.

00:10:43 Nurse 2

So I'm going back off on the (unintelligible)

00:10:48 Nurse 2

We're desaturating again.

00:10:54 Doctor

Do we have that magnesium turned?

00:10:55 Nurse 2

I've just given him the magnesium and the um...

00:11:00 Nurse 1

Do you want an infusion as well?

00:11:01 Doctor

An infusion yeah.

00:11:04 Nurse 2

So I'm not able to achieve tidal volumes.

00:11:14 Nurse 1

Yeah, sats are 73, we're dropping off now. Yeah...map of 48, sats are 70.

00:11:30 Nurse 1

Slightly more tachy than we were before.

00:11:32 Doctor

Have you got any adrenaline?

00:11:34 Nurse 2

We got noradrenaline.

00:11:37 Doctor

Would you mind starting that?

00:11:38 Nurse 2

It's on at the moment, I'll go up...

00:11:42 Doctor

Might be worth having a feel of his breathing. See where we are up to.

00:11:45 Doctor

So let's just turn this on to 15 litres.

00:12:00 Doctor

It's really tied to bag, is it?

00:12:04 Doctor

At this point we might need some help. So ideally we could an ICU consultant on this, would be the best person. Would you mind? Running on one side at the moment.

00:12:21 Doctor

Would you mind coming round here and taking over the bag?

00:12:30 Nurse 2 (on phone)

Can we speak to the adult intensive care consultant?

00:12:41 Doctor

So feeling the trachea. It’s deviated to the left hand side. So I think we have a tension pneumothorax on that side. We need to get large grey or orange med form please.

00:13:11 Nurse 2

Just to give you an update, just called, waiting to hear back for the consultant.

00:13:17 Doctor

OK. Thank you.

00:13:37 Doctor

Actually I need a syringe if that's alright.

00:13:41 Nurse 2

Do you want me to continue the bag?

00:13:42 Doctor

Yeah, you can keep bagging at the moment. Keep the oxygen going.

00:13:53 Nurse 2 (on phone)

Yeah, we have a patient, a trauma patient who had an accident, horse kicked the abdomen and then went to theatre. So we're having problems ventilating at the moment. He's got a history of mild asthma as a child. At the moment the chest x-ray confirmed he has a tension pneumothorax. Currently saturating at 71%, map of 45. We're currently decompressing the pneumothorax. He's not had a drain in at the moment.

00:14:24 Doctor

Right let's reassess.

00:14:30 Doctor

You don't see the stethoscope hiding anywhere?

00:14:45 Doctor

Sats are 89. Might give you a break with the bag.

00:14:49 Nurse 2 (on phone)

He's currently on 40 milligram of norad, with a map of 55.

00:14:55 Doctor

We need to get a chest drain set ready.

00:15:00 Doctor

We're gonna do a large surgical chest drain.

00:15:01 Nurse 1

His rhythm has changed.

00:15:13 Faculty

I'll get that chest drain for you.

00:15:16 Doctor

So if you look at his rhythm, it has actually changed on the ECG.

00:15:26 Nurse 2

Sorry, is it a chest drain?

00:15:42 Nurse 2

So currently a map of 67 that had been going up with the norad running.

00:15:47 Doctor

So I noticed on here that he does have a left bundle branch block which might suggest a myocardial vent.

00:15:59 Nurse 2

So, that was the consultant on the phone. They suggested a chest drain.

00:16:07 Doctor

Yes, would you mind getting that ready?

00:16:09 Nurse 2

Yeah, just in the process of getting that ready.

00:16:13 Doctor

OK, so we have a broad complex tachycardia at the moment.

00:16:19 Doctor

He is not necessarily compromised with that noradrenaline. So at the moment, 12 lead ECG would be great. Could I get you to do another gas to see what his electrolytes are like?

00:16:41 Doctor

So lactate was 3.4, potassium was 4.5 and we don't know about the others.

00:17:01 Doctor

So there's no capture beats, no fusion beats.

00:17:16 Doctor

So it's a more complex tachy. We are not compromised at the moment with it. So I think one of the best things for us to do is to consider we might have a chat with the cardiologist. See what they’d like us to do. Normally, they’re compromised, we shock them..

00:17:34 Nurse 1

Blood pressure is dropping.

00:17:35 Doctor

There we go. Thank you.

00:17:38 Doctor

So we've just got into a VF risk. Can you check to see if there is a pulse?

00:17:44 Doctor

There's no CO2, ok. Can you start chest compressions please?

00:17:49 Doctor

OK. So we're in the shockable side of the algorithm, so let's have a look at this time. So we 115 and then escalate. 100% oxygen please.

00:18:02 Doctor

OK, so we've got a closed oxygen circuit, OK. I want you to continue with chest compressions. Everybody else, I want you to stand clear. Clear. I am charging. Don’t worry, I will not shock you. Ok, step away...and shocking....ok back on the chest.

00:18:27 Doctor

Could I ask you guys to do some timing for two minutes for the next cycle? Do I know when that is? There's a clock on here. It's 2:20 now.

00:18:42 Doctor

So we have just chest compressions, 4 H's and 4 T's and so I've got 100% oxygen. Yeah, you do have sinus CO2 coming back. And some tidal volumes going in.

00:18:53 Doctor

So hypoxia, we're OK with, we have with our tube. Hypotension, so fluidwise, is that some Hartmans? Can you put it at 999? Bolus to go in. Hyper/hypo tension, hyper/hypo thermia hopefully shouldn’t come up but can you just check? Can we find a temperature probe?

00:19:11 Doctor

OK, next. We're thinking about hypoxia, hypertension, oh god. Hypo, hyperthermia. Hypo, hyper kalemia. Repeat gas?

00:19:29 Nurse 1

Yeah, repeat gas.

00:19:32 Doctor

So potassium five. It's on the higher side, but it shouldn't cause this.

00:19:39 Doctor

We're looking at tension pneumothorax, we can check again but we believe that's what it is. Is there an ultrasound or echo machine available?

00:19:46 Nurse 2

Yeah, yeah, I can get, yeah.

00:19:52 Doctor

Would you mind getting one?

00:19:55 Doctor

Sorry, let us know if you're getting tired, OK?

00:19:57 Nurse 1

Yeah.

00:19:58 Doctor

OK, so checking for the trachea deviation.

00:20:09 Doctor

OK, so it's unlikely to be tension pneumothorax. Right, have we got an ultrasound machine?

00:20:12 Nurse 2

It's here, but I think it's imaginary.

00:20:16 Doctor

OK, So what we're going to do is I'm going to quickly do the ultrasound, I want you to look at the rhythm and tell me when 10 seconds is up. I want you to look at the rhythm and tell me what the rhythm is.

00:20:28 Doctor

Hold compressions. Echoing.

00:20:31 Nurse 2

10 seconds is up.

00:20:31 Nurse 1

Back in normal rhythm, tachy.

00:20:39 Doctor

There is a pulse, OK.

00:20:44 Doctor

Alright so post resus care for this patient, worth getting another blood gas. I'm not sure he has a chest x-ray but another chest x-ray would be ideal. If you could do some bloods as well.