

<b>Name:</b>	M Hall	<b>RR:</b>	Ventilated	<b>CRT:</b>	2s
<b>D.O.B.</b>	01/09 (53Y)	<b>ETCO2:</b>	6.2	<b>Temp:</b>	37.2
<b>Address:</b>	(Insert local address)	<b>Sats:</b>	95%	<b>BM:</b>	5.6
		<b>Heart Rate:</b>	125	<b>Weight:</b>	77Kg
<b>Hospital ID:</b>	446 862 4511	<b>BP:</b>	140/65	<b>Allergy</b>	NKDA
<b>Ward:</b>	General surgery				
<b>Background to scenario</b>			<b>Specific set up</b>		
A patient undergoing a shoulder arthroscopy (or any elective operation) under general anaesthesia and develops malignant hyperthermia			Mannequin on theatre table Intubated and connected to ventilator Cannulated with fluid running Anaesthetic drugs and chart		
<b>Required embedded faculty/actors</b>			<b>Required participants</b>		
Junior anaesthetist Surgeon			Anaesthetist ODP, theatre staff, surgeons in MDT sim		
<b>Past Medical History</b>					
PMH: depression, otherwise well. Suffers from reflux. Non-smoker and drinks occasional alcohol No previous anaesthetics. No airway concerns					
<b>Drugs Home</b>			<b>Drugs Hospital</b>		
Sertralline Gaviscon PRN			Induction drugs Antibiotics (as per local protocol)		
<b>Brief to participants</b>					
You are the on call anaesthetic team, a call goes out from theatre X for anaesthetic assistance Junior anaesthetist handover – Anaesthetised patient with a consultant who just stepped out. 54 year old for elective arthroscopy. Induction was uneventful, grade 1 intubation. He was just transferred into theatre, established on sevoflurane when I noticed he’s tachycardic with rising CO2. I have increased ventilation and deepened anaesthesia but called for help a little early as I am new. I have also just given antibiotics so I don’t know if this is an allergic reaction.					
<b>Scenario Direction</b>					
<b>Stage 1, 0– 5 minutes</b>					
<b>A</b>	Intubated				
<b>B</b>	ETCO2 6.2 and rising, sats 95% and dropping				
<b>C</b>	HR 125 and rising, BP 140/65 and rising				
<b>DE</b>	Temp 37.2 (only give if checked, rises but late sign) Anaesthetised with inhalational agent MAC >1 Surgery not started yet, surgeons requesting Time-out to be carried out, unaware of anaesthetic issue				
<b>Rx</b>	Handover and assessment of situation Systematically identify potential causes Declare critical incident, call for help (appropriate for level of participant) Start symptomatic treatment				
<b>Stage 2, 5–10 minutes</b>					
<b>A</b>	Intubated				
<b>B</b>	ETCO2 12.4 Sats 90%				
<b>C</b>	HR 155, BP 168/88				
<b>DE</b>	Temp 40.9				
<b>Rx</b>	Identification of MH as a cause Treatment with dantrolene (and allocation of team to draw up) Eliminate causative agent (vapour free machine), consideration of alternative anaesthetic Active cooling Additional monitoring, investigations Treat complications Discussion of need for surgery (elective, non cancer), destination of ongoing care, need for family update and further investigations including referral to Leeds MH Unit Scenario can be ended when appropriate level of management is completed, patient condition can improve slightly by this point				

Guidelines	
AoA QRH handbook – Malignant hyperthermia, Peri-operative hyperthermia <a href="https://anaesthetists.org/Portals/0/PDFs/QRH/QRH_2-8_Periooperative_hyperthermia_v1.pdf?ver=2018-07-25-112713-987">https://anaesthetists.org/Portals/0/PDFs/QRH/QRH_2-8_Periooperative_hyperthermia_v1.pdf?ver=2018-07-25-112713-987</a> <a href="https://anaesthetists.org/Portals/0/PDFs/QRH/QRH_3-8_Malignant_hyperthermia_crisis_v2.pdf?ver=2021-01-05-141951-520">https://anaesthetists.org/Portals/0/PDFs/QRH/QRH_3-8_Malignant_hyperthermia_crisis_v2.pdf?ver=2021-01-05-141951-520</a>	
Guidance for Patient Role	
Opening lines/questions/cues/key responses Anaesthetised	
Guidance for ODP role	Guidance for Surgeon
Actions If not checked, can remind temperature monitoring Competent, but needs reassurance and task allocation	Unaware of anaesthetic incident until specifically declared, keen to get surgery going. Can ask, shall I call your consultant if you aren’t happy to start surgery.
Guidance for Role e.g. ITU/Anaesthetic Senior	Guidance for other role
Expectations/actions Support as necessary depending on level of participant	
Session Objectives	
Clinical	Identification and treatment of malignant hyperthermia
Non-technical skills	
Teamworking	Coordinating team activity – role allocation when numerous roles need to happen simultaneously, exchanging information at handover, assertiveness if necessary, supporting members of team
Task management	Planning for next steps as situation changes, prioritising and utilising resources to complete tasks, following guidelines
Situational awareness	Gathering information in an acute/unfamiliar situation, recognising and understanding cause of deterioration, anticipating next steps
Decision making	Identifying options and balancing risks and benefits of treating different potential conditions, continuous re-evaluation