Abstracts - RCSI Surgical Society

15th Intercollegiate Senior Surgical Case Competition,

RCSI Charter Meeting Wednesday February 3rd, 2021

Oral Presentations

Introduction

15th Annual Intercollegiate Senior Surgical Case Competition

The15th Intercollegiate Case Competition was held during RCSI Charter Week on Wednesday February 3rd, 2021. The competition is hosted by the RCSI Student Surgical Society. This year due to the ongoing pandemic, the meeting took place in a virtual format. Over 150 students, lecturers and senior surgical educators were in attendance, including students from RCSI Bahrain.

Each medical school in Ireland is represented at the Intercollegiate Competition by the winner of their senior surgical case competition. This year 6 medical schools competed and they were NUIG, QUB, RCSI, TCD, UCD, UCL.

The overall winner was awarded with the coveted Professor David Bouchier Hayes Medal. The late Professor Hayes was Chair of Surgery at RCSI and the Richmond Hospital, a world-renowned surgeon and academic. The medal is named to honour his surgical legacy and was presented virtually this year to the joint 2021 winners, Ms Siobhain Ryan RCSI and Ms Ellen Geary UCD.

We would like to acknowledge our 4 expert judges and thank them for giving so generously of their time: Ms Bridget Egan, Professor Aoife Lowery, Professor Rustom Maecksha and Professor Rory McConn Walsh. The judges acknowledged the high standard of all presentations and congratulated the other 4 competitors Muireann Keeting (NUIG), Courtney Sarah Madden (QUB), Eimear Kirby (TCD) and Frengopoulos (UL).

We would like to thank the executive student committee of the RCSI Surgical Society, the Student President Ms Reem AlShimali and the Faculty President Professor Camilla Carroll for the professional delivery of the first “Virtual” competition. Thank you to the IMJ for publishing the abstracts of our future surgeons.

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Delivering Complex Trauma Care in the COVID Pandemic

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Presentation

We present a case of delivering complex trauma Care in the COVID pandemic, an extreme example of deliberate self-harm. A 39- year-old male was found by police helicopter in the woods after causing deliberate self-harm with a knife to his neck and perineum.

Diagnosis

Psychiatry determined marijuana induced psychosis to be the causative factor in this act of self-harm. The trachea was transected and exposed, while the epiglottis was furled and partially amputated. There was also a proximal and extensive perineal injury.

Management

Emergency On Scene Management

The patient was not experiencing a catastrophic haemorrhage and thus there was emergency airway management on the scene. An Emergency Physician performed a rapid sequence induction of anaesthesia and direct intubation of the trachea. The patient was taken directly to the COVID emergency department.

Neck Laceration

A laryngeal and epiglottal repair were performed by the ENT team. The laryngeal anatomy was preserved after reconstruction of the epiglottis and tracheostomy.The patient was decannulated 2 weeks post-operatively with insertion of a speech valve.

A radiologically Inserted Gastrostomy (RIG) was inserted, due to ongoing swallowing issues. The patient received intensive speech and language therapy, the RIG has been removed, with return to normal oral intake.

Perineal Injury

The plastic surgery team performed a microsurgical perineal repair. On day 5 post-operatively venous congestion occurred in the graft and leech therapy was instituted for 7 days.

Post-operatively the patient developed a lateral urethrocutaneous fistula and a stricture at the penobulbar junction, diagnosed by pericatheter urethogram. This has been managed by suprapubic catheterisation pending urethroplasty.

Psychiatric Input

The patient was kept sedated for 2 weeks post - operatively. Curremtly he is taking antipsychotic medication and continues to make progress.

Conclusion

This was a very complex case, requiring a multidisciplinary input from medical and surgical teams. Co-ordinating care in this setting requires attention to good communication and professionalism between teams, in order to synchronise continuity of care for the patient.

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Endoscopic Thermal Vapor Ablation: A Novel Approach to Lung Volume Reduction in Upper Lobe Predominant Heterogeneous Emphysema

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Presentation

We present a 62-year-old Irish female who presented to the accident and emergency department febrile with increased shortness of breath, worsening cough and green sputum production. This patient has a known background of severe upper lobe predominant heterogeneous centrilobular emphysema, with a 40-pack year smoking history, hypertension, osteoporosis and gastroesophageal reflux disease. The patient has marked anxiety secondary to dyspnoea, with a significantly reduced quality of life on self-assessed rating scales. There is significantly decreased exercise tolerance shown on six-minute walk testing.

Diagnosis

The patient was admitted acutely, diagnosed with a recurrent infective exacerbation of chronic obstructive pulmonary disease. The primary inpatient treatment included intravenous antibiotics, a tapered steroid regime, bronchodilator nebulisation and multidisciplinary input. Despite optimal medical management, adherence, continued smoking abstinence and engagement with pulmonary rehabilitation; the patient continued to be debilitated. Due to the severity of her condition and significant impact to her quality of life, the case was referred to thoracic surgery and subsequently discussed at the lung volume reduction (LVR) multidisciplinary meeting for consideration of suitability.

Treatment

The patient subsequently underwent a novel type of LVR; the first of its kind in Ireland via bronchoscopy called; *'endoscopic thermal vapor ablation'* or InterVapor. It is a minimally invasive approach with the aim of achieving lung volume reduction. InterVapor consists of a generator that converts thermal energy into heated water vapour that will be delivered to a pre-selected damaged lung segment via bronchoscope. A catheter is deployed through the bronchoscope and a balloon is inflated to the validated diseased lung segment. The water vapor is then deployed to the specific area of interest where immediate blanching can be visualised post treatment. InterVapor's aim is to gradually reduce these diseased lung segments over a 4–12-week period, achieving lung volume reduction through the process of tissue remodelling.

Discussion

The patient was followed up over a six-month period, where there is evidence of improvements in exercise tolerance, quality of life scores as well as decreased hospitalisations and clinically meaningful pulmonary lung function. This case is an excellent example of collegiately between specialties, optimising a patient's medical management with a minimally invasive approach, resulting in patient centred care and clinically meaningful results.

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A Novel Approach to Rectal Surgery: Robotic TAMIS

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Presentation

We present the case of the first Robotic Transanal Minimally Invasive Surgery (R-TAMIS) to be performed in Ireland. The patient was a 45-year-old female who had been experiencing bright red blood per rectum for one year. She was otherwise well and had no family history of note.

Diagnosis

Initial colonoscopy revealed a large, sessile polyp located in the mid-upper rectum, at the level of the second rectal valve. Biopsies showed a tubulovillous adenoma with high grade dysplasia and foci suspicious for malignancy and the patient was referred for surgical opinion. Repeat sigmoidoscopy with biopsy did not yield conclusive histology and MRI showed a mass in the mid-rectum, suspicious for T1 invasion, with no evidence of vascular invasion or mesorectal lymphadenopathy. A CT Thorax, Abdomen and Pelvis demonstrated no evidence of potential metastatic disease.

Treatment

Following discussion at the Gastrointestinal Multidisciplinary Meeting and consultation with the patient, it was decided to proceed with a surgical excision of the lesion. A R-TAMIS was performed using the da Vinci Xi dual console robotic platform. A full-thickness excision of the lesion was achieved followed by closure of the defect. The final histology from the operative specimen demonstrated that the lesion (36mm maximum dimension) was an invasive, moderately differentiated adenocarcinoma (pT1) arising in a tubulovillous adenoma with high-grade dysplasia. Vascular invasion was not seen, and surgical excision of the lesion was complete with a deep margin of 6mm.

Discussion

A R-TAMIS is a natural progression of the original laparoscopic TAMIS (L-TAMIS) approach and addresses potential technical limitations of both the surgeon and assistant encountered during L-TAMIS. It readily allows for 3 operating ports, 2 robotic and 1 bedside assistant, whilst ensuring excellent camera control and operative views. The literature demonstrates that short-term outcomes for R-TAMIS are promising it is a safe approach with low morbidity and no difference in perioperative outcomes compared to L-TAMIS. It is indicated for those with large adenomas that are not endoscopically resectable, or favourable T1 malignancies. In the ever-expanding era of organ preservation in the treatment of rectal cancer, it is likely that neoadjuvant treatment followed by a transanal surgical approach will become more utilised in treatment algorithms and R-TAMIS lends itself very nicely to this approach. It may also afford surgeons the opportunity to take on cases where a L-TAMIS would potentially not have been possible, or at the very least extremely challenging from a surgical standpoint.

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Management of Paediatric Orbital Floor Fractures: A Case Report

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Presentation

This case reports a 7-year male who presented to hospital with his mother following a blunt force trauma to his face. The patient presented with severe right infraorbital pain, upward gaze diplopia and nausea. He had four episodes of vomiting prior to attending hospital and his mother observed that he was drowsy following the injury.

Diagnosis

A right orbital floor fracture was visualised on plain film imaging with a teardrop appearance indicating herniation of orbital tissues into the right maxillary antrum. A CT orbits was performed to assess if there was extraocular muscle entrapment. CT confirmed an orbital floor fracture with herniation of orbital fat into maxillary antrum sparing the inferior rectus muscle. However, given the nature of the injury, the patient's symptoms were unlikely to resolve with conservative management. After ruling out a head injury with a period of neurological observation, the patient was then referred the oral maxillofacial team for surgical intervention.

Treatment

Open reduction of orbital floor fracture was performed urgently, and orbital contents reduced. A polydioxanone sheet was inserted to prevent further herniation of orbital contents and a forced duction test was performed to ensure no further entrapment of orbital tissues. The patient was started on antibiotics and made a good recovery. His diplopia had almost fully resolved two days postoperatively and he suffered no postoperative complications such as a retrobulbar haemorrhage or an infraorbital nerve injury. He was discharged two days post-procedure and reviewed at clinic four weeks later with no further issues.

Discussion

Orbital floor fractures may present differently in the paediatric population than in adults. Following orbital trauma, the oculovagal reflex may be stimulated due to traction of the extraocular muscles leading to bradycardia, hypotension, nausea and vomiting. These symptoms may mimic a head injury and if the oculovagal reflex is not considered, surgical intervention may be delayed unnecessarily. Due to the nature of this injury and the risk of permanent visual disturbance from the entrapment of the periorbital and extraocular muscles, it is recommended that a head injury is promptly ruled out, using the appropriate guidelines and that the patient is referred immediately to maxillofacial surgery for surgical intervention

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A Case of an Acute Abdomen and Collapse

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Presentation

A 42-year-old male presented to a peripheral hospital with sudden onset abdominal pain. This was on a background history of involvement in road traffic accident in which he was ejected from the car three weeks prior to this presentation. The patient did not seek medical attention at the time of the accident. The patient collapsed shortly on admission to hospital and was rushed immediately to theatre. The patient had two cardiac arrests during the operation. Four liters of free blood was found in the abdomen but the bleeding point could not be identified accurately. Repeated attempts were made over sewing and stopping the bleeding but all failed. The abdomen was packed with swabs and an Abthera dressing was left on the open laparotomy wound. The patient was then transferred to University Hospital Galway for vascular intervention and further management.

Diagnosis

On transfer a triphasic CT angiogram was performed that showed bleeding from the splenic artery and portal vein. Upon reopening of the abdomen bleeding points were identified at the proximal splenic artery, portal vein and superior mesenteric vein.

Treatment

The abdomen was reopened, and the aorta was immediately cross clamped in the supra celiac position to secure adequate perfusion to the brain and coronary arteries. A splenectomy, distal pancreatectomy, portal vein repair and superior mesenteric vein repair was then performed to control the bleeding. Histological analysis of the specimens showed hemorrhage into peripancreatic fat and granulomatous inflammation involving the splenic artery parenchyma. The post-operative course was complicated by an acute kidney injury which required hemodialysis and correction of hyperkalemia over the following three days. Two weeks after the operation the patient made a full recovery and was discharged back to his original hospital.

Discussion

This is a case of terminal hemorrhage management. Although the exact cause of bleeding could not be identified in the acute setting, the case highlighted important aspects of the surgical management of massive hemorrhage. Management of hemorrhage comes back to the core principles and priorities. The first priority is to secure adequate perfusion of the brain and coronary arteries to ensure survival. Only after cardiac control is obtained can the sources of bleeding be adequately identified and treated.