Standard Operating Procedure (SOP)

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1	22nd August 2016	Mr Andrew Tapp / Mr Lynn	Archived	Ratified at Gynae Clinical Governance
2	17th October 2018	Mr Andrew Tapp / Mr Lynn	Archived	Full review - no changes.
3	July 2023		Archived	Audit & Monitoring paragraph update to reflect new process
4	17th May 2024	Mr Matthew Wood/ Mr Naing Lynn	Active	Full review

SOP Objectives	To provide guidance for the process to be followed when the risk of a urological injury is identified at the pre-operative phase or injury occurs during surgery.
Scope	There is a recognised risk of a urological injury for the group of patients undergoing Obstetric and Gynaecological surgery.
Audit/Monitoring	Datix incident reporting system (Including incident and case review processes) Surgical Complications Register, Complaints system. Compliance with this guideline / SOP will be audited as part of the Shrewsbury and Telford Hospital NHS Trust's five-year rolling programme of NICE and local guideline audits, unless circumstances require an earlier or more frequent audit. The audit will be carried out against the auditable standards and the results of the audit will be reported and acted on in accordance with the Trust Clinical Audit Policy (CG25).

Number	Brief	Responsibility
1.0	**Management of Urological Injury at Obstetric and Gynaecological Surgery**	
1.1	Pre-operative planning • Actions should be taken in the preoperative phase to identify the possibility of injury related to history and previous medical/surgical disease. • If there is a moderate or high possibility of injury, then a pre-operative and operative plan should be made with the input from Urology with clear lines of communication identified, and the plan filed in the notes and available on the Patients Portal. If there is a moderate or high possibility of injury, but the situation is urgent and no plan has been made, contact urology or call Consultant for advice.	Referring surgeon, Pre- Operative Assessment Nurses, Anticipated operating surgeon
1.2	Intra-operative prevention • Careful surgical technique should be used at all times with positive attempts made to identify the bladder and ureters if they form part of the operative field. • If there is difficulty in defining the bladder edge, then retrograde filling may assist in identifying the bladder and identifying injury. • Occasionally there is difficulty in identifying the ureter at surgery, but identification is required for safe completion of surgery. The principles of identification of the ureter are as follows: o During open surgery, bifurcation of iliac artery is a reliable landmark, as ureter is usually in front of the bifurcation. o During laparoscopic surgery, it is sometimes easier to identify the ureter above the pelvic brim lateral to gonadal vessels. o At open surgery palpation can also be used to support visualization. If ureteric identification is not possible, but required, please contact the on-call Urologist (via switchboard).	Operating Obstetrican/ Gynaecologist
2.0	**Injury at Obstetric/Gynaecology Surgery**	
2.1	**Bladder injury:** • Confirm injury: in most cases the Foley catheter balloon will be visible. If in doubt, fill the bladder with normal saline and methylene blue. • Define limitations of injury. • Contact Tier 3 to attend if the operating surgeon is not a consultant. • Most injury to the bladder can be dealt with by the O&G team. • Confirm repair will not jeopardize ureteric function. (If there is concern manage as per 2.2 with consultant urological involvement.) • Ensure clots are removed from bladder before commencing repair. • Undertake 2 layer repair of bladder ensuring that the extent of the injury is defined (and there is no other injury). • 1st layer is “through and through” continuous suture using 2/0 Vicryl on a round bodied needle. • 2nd layer is an imbricating layer as we would use for the second later at LSCS closing over the primary layer with the adventitious tissue and muscle. • Do a leak test with 300ml of Saline with Methylene blue added. • Add in additional closure as is required aiming for a 2 layer repair as described. • Leave a Robinsons drain (size 20 or preferred size) in pelvic cavity. Leave a Foley catheter at least size 16 (or larger if there is significant Haematuria with clots).	Operating surgeon and support team
2.2	Ureter injury, or Bladder injury where repair may jeopardize function: • All injury, or suspected injury, to the ureter requires Consultant Urological Surgeon’s attendance. • Proximity of bladder injury to the ureter where repair of the bladder may jeopardize ureteric function should be dealt with as for injury to the ureter by a Consultant Urological Surgeon.	Operating surgeon and support team

	• The on-call Urologist can be contacted to attend via switchboard. • In preparation for the arrival of the Urologist, please check with the Urologist whether the following are required: o Image intensifier and radiographer in theatre. o Types of ureteric catheter, guide wire and stent.	
2.3	**Injury types** The urological structures can be injured at surgery by many different mechanisms, including blunt, sharp, crush, devascularization, direct heat and conducted heat. Be wary that some of the mechanisms can initially demonstrate little evidence of trauma, but later necrosis can lead to fistula. In the event of possible injury by one of these mechanisms urological opinion should be sought to allow appropriate timely action as required.	
2.4	It is recognized that on occasion, urgency of actions (such as in the presence of life threatening bleeding) may jeopardize ideal urological care. In such circumstances, actions that will offer the best predicted outcome for the patient should be taken.	
3.0	**Post-operative management of urological injury** • This is general advice, patient specific post-operative management plans will have been written by the urologist/O&G surgeons. • Inform patient of injury and management plan. Complete Duty of candour process and complete a Datix. • Hourly urine measurement until the urine is clear of blood • Drain should remain in for 24 hours and then take sample of drain fluid for Urea and Creatinine. Drain can be removed once: • <50 ml drained in 24 hours, and • Drain fluid Urea and Creatinine compatible with serum • Leave the indwelling catheter for 14 days, ensuring the patient is aware of the possibility of catheter blockage, both in hospital and on discharge. • Arrange prior to discharge: • CSU at day 10 (usually through GATU), • book cystogram for day 14 (usually through GATU) • Book Outpatient appointment with Consultant involved in the surgical repair. • Arrange for patient to phone GATU (Gynaecology assessment and treatment unit) 4 hours before cystogram to check CSU. If positive, then arrange for patient's attendance for IV antibiotic cover (depending on sensitivities) 1 hour before cystogram. This will usually be undertaken in GATU,but could also be facilitated in an obstetric setting (delivery suite or postnatal ward) for obstetric patients if felt to be more appropriate on an individual basis. • If no leak on cystogram, then remove catheter and discharge (treat any ongoing infection that may have been identified as above). If leak, contact on-call Consultant, who will then discuss with urology.	Operating surgeon, Nursing staff, Supporting O&G medical team