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INDWELLING CATHETERS: COMPLICATIONS AND SOLUTIONS

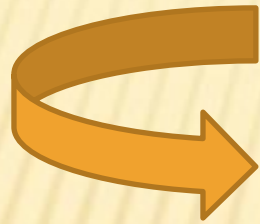
AIMS OF PRESENTATION

- ✗ Discuss what can go wrong
- ✗ Discuss reducing risks
- ✗ Discuss managing troublesome problems and when to refer

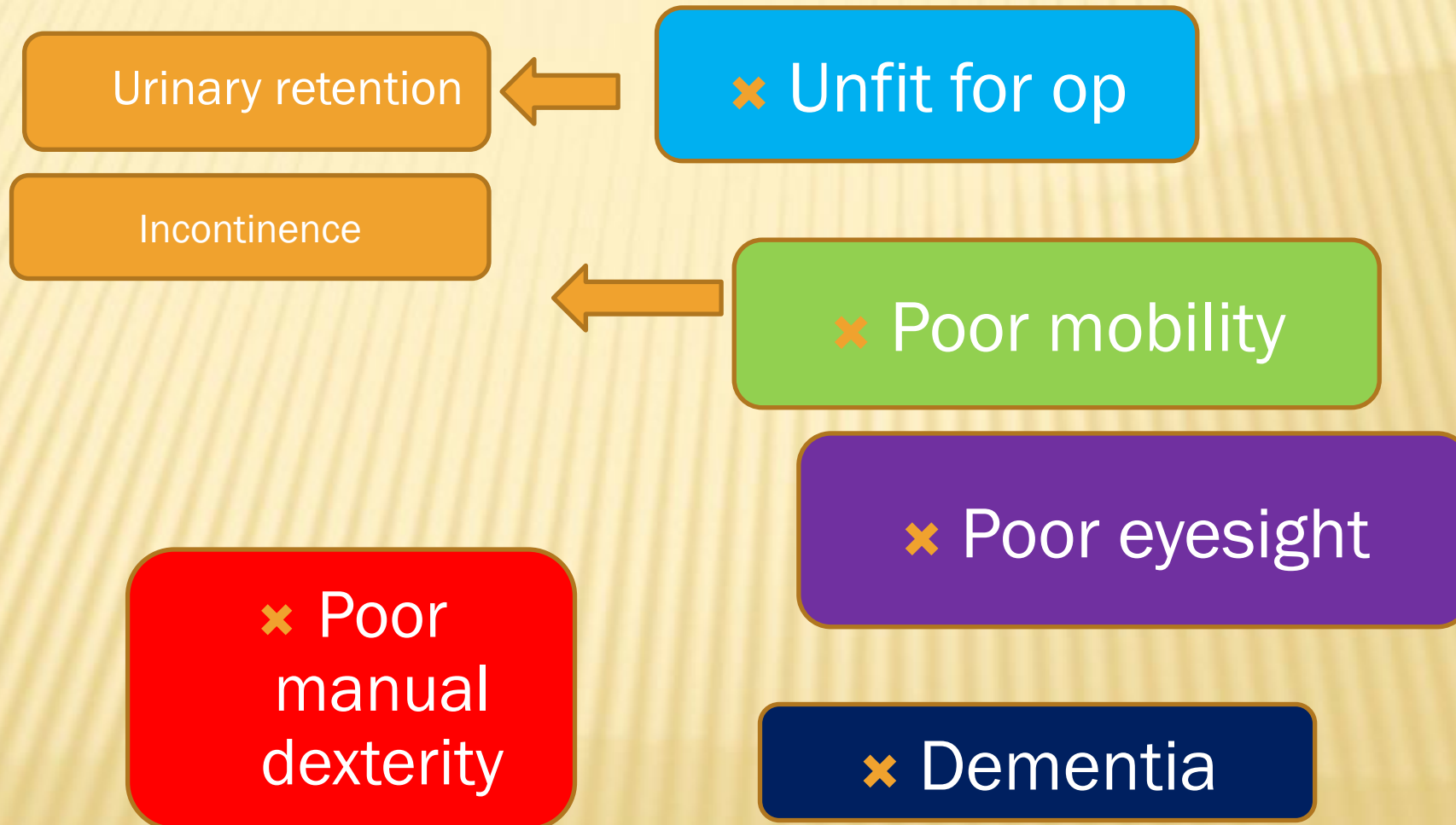
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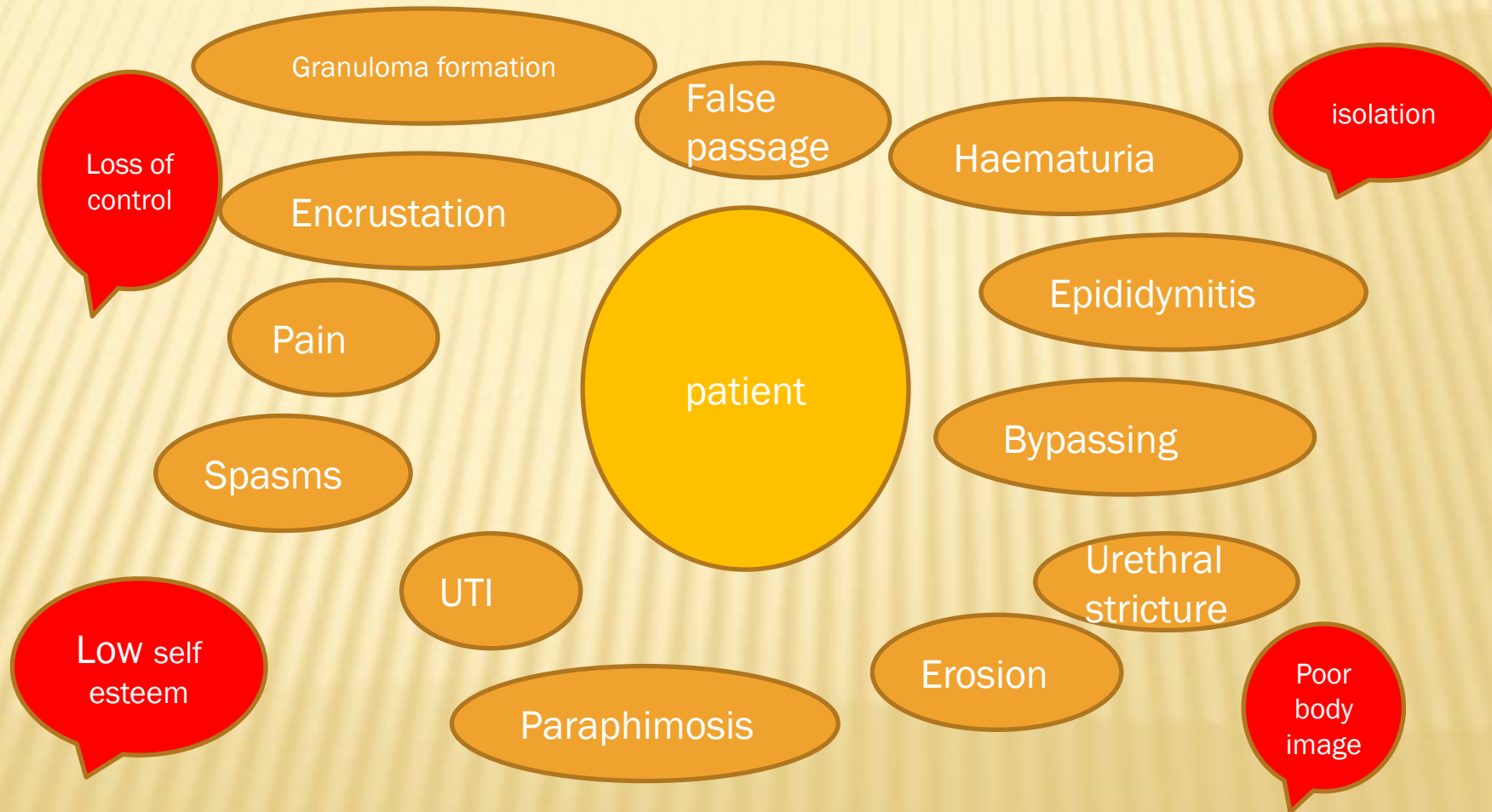
TYPES OF CATHETERS



INDICATIONS FOR LONG TERM INDWELLING CATHETERISATION



WHAT CAN GO WRONG



WHAT DOES THIS MEAN?



Poor patient experience, -ve
impact to quality of life

Increased pressure on service

Increased cost

Warwickshire (excluding
Cov.) 600 patients have
indwelling catheter in the
community, 6% troublesome

CATHETERISED PATIENTS IN NURSING HOME

- ✗ More likely to have received antibiotics
- ✗ To have spent more time in hospital
- ✗ Three-times more likely to have died



COMPLICATIONS OF CATHETER USE

- ✗ Bacterial colonisation and urosepsis
- ✗ Haematuria and clot retention
- ✗ Damage to urethra (catheter hypospadias, erosion and catheter expulsion and strictures)
- ✗ Encrustation, blockage and stone formation
- ✗ Catheter bypassing
- ✗ Paraphymosis
- ✗ Suprapubic wound discharge and odour

BACTERIAL BIOFILM



- ✗ Bacterial attachment and secretion of gel
- ✗ Some species produce crystalline gel (struvite and appatite crystals)
- ✗ Urease-splitting organisms (*Proteus*) lower pH and increase precipitation of crystals
- ✗ The crystals are shed into the bladder and occlude the lumen
- ✗ High count of bacteria leads to UTI

CATHETER ASSOCIATED INFECTION

- ✗ Up to 40% of hospital-acquired infections
- ✗ Usually polymicrobial in long-term catheterisation
- ✗ Onset or worsening of fever, rigors, altered mental status, malaise, or lethargy with no other identified cause; flank pain; costovertebral angle tenderness; acute hematuria; pelvic discomfort
- ✗ Not necessarily an odour

INSUFFICIENT EVIDENCE

- ✗ Silver or antimicrobial coated catheters (large negative RCT)
- ✗ Prophylactic antibiotics/ cranberry
- ✗ Bladder irrigation
- ✗ Enhanced meatal care
- ✗ Sterile versus clean insertion of catheter

SOME EVIDENCE

- ✗ Avoidance of catheter
- ✗ Replacement of catheter on development of symptomatic infection
- ✗ Suprapubic rather than urethral type of catheterisation (small RCT)

PREVENTION OF CAUTI

URINARY CATHETER HYPOSPADIAS



- ✗ Long-term use of urethral catheters in neurologically-impaired patients
- ✗ Suprapubic catheter insertion should be considered in appropriate patients (fitness for anaesthetic and life expectancy)

URETHRAL EROSION

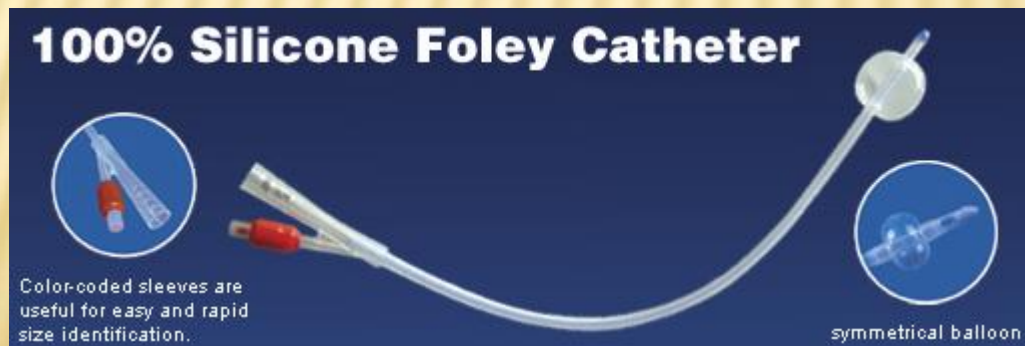


- ✗ Female equivalent of catheter hypospadias
- ✗ Leads to bypassing and catheter expulsion
- ✗ Treatment – suprapubic catheter +/- Botox, TVT tape

DIFFICULT CATHETER CHANGE



- ✗ Difficulty in removal (encrustation, incomplete deflation of the balloon)
- ✗ Difficulty in insertion (external sphincter spasm, stricture)



URETHRAL

- ✗ Patient relaxed and distracted
- ✗ Lying flat (or as flat as possible)
- ✗ Males – ask to cough when advancing past external sphincter
- ✗ Females – some easier to locate urethra in lateral position

SUPRAPUBIC

- ✗ Inject some Instillagel for lubrication of the track before the catheter removal
- ✗ Have a helper removing the catheter, so the new catheter could be re-inserted immediately

TIPS FOR EASY CATHETER CHANGE

BLADDER STONES



- ✗ Blocking
- ✗ Bypassing
- ✗ Haematuria
- ✗ Pelvic pain

Patients with repeated blocking of catheters appear to be metabolically different from other patients, because they excrete more alkaline urine, calcium, protein, and mucin

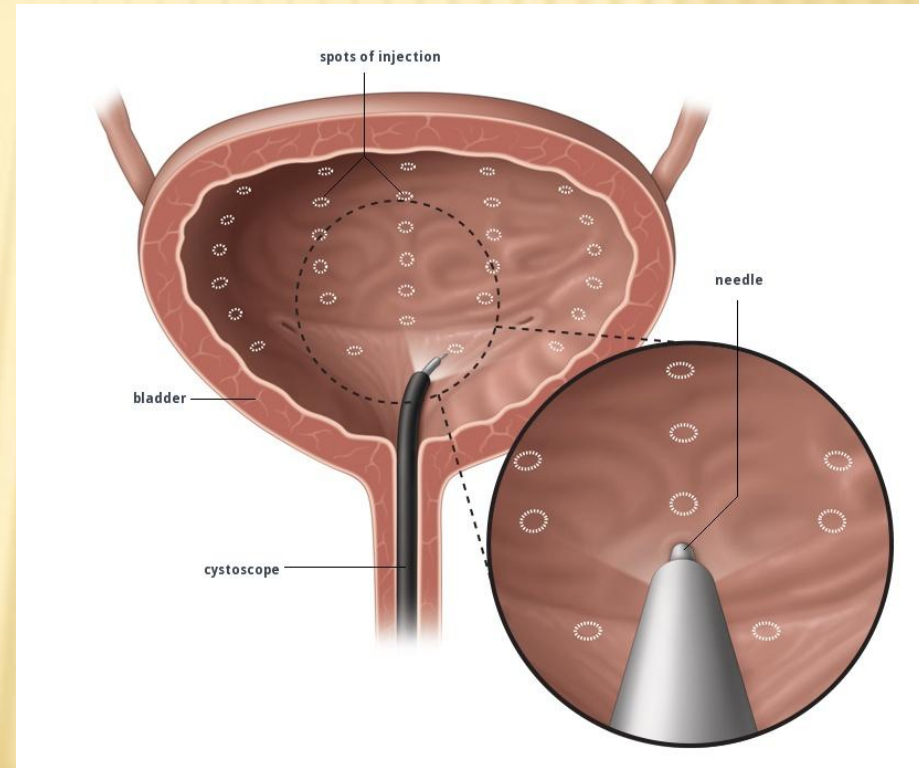
BLADDER STONES - PREVENTION



- ✗ Increased fluid intake
- ✗ Increased frequency of catheter change
- ✗ Catheter of sufficient diameter/open tip
- ✗ Use of Flip Flo valve
- ✗ Urine acidification (megadoses of Vit C)
- ✗ Bladder irrigation (RCT in Open Journal of Urology Vol.05 No.04(2015))

CATHETER BYPASSING - OCCURS IN 40% OF PEOPLE WITH CATHETERS

- ✗ Detrusor overactivity
- ✗ Rule out blocked catheter and urinary stones
- ✗ Treatment with anti-cholinergic medication or Betmiga
- ✗ Cystoscopy and Botox (can be done under LA)



VISIBLE HAEMATURIA AND CLOT RETENTION



- ✗ Catheter trauma to prostate and bladder
- ✗ Frequently follows replacement of catheter
- ✗ Many patients are on anti-platelet/anti-coag medication
- ✗ If causes blockage of catheter and retention needs admission

VISIBLE HAEMATURIA AND CLOT RETENTION - MANAGEMENT



- ✗ Bladder washout/3 way catheter/cystodiathermy
- ✗ Investigation if appropriate (not in very elderly and infirm)
- ✗ 5ARI/supra-pubic catheter

CONCLUSION



- ✗ Long-term indwelling urinary catheters lead to frequent complications, some life-threatening
- ✗ Avoidance of the catheter still the best solution
- ✗ Selected patients should be considered for laser prostatectomy or alternative diversion (urinary conduit)

FURTHER READING

European Association of Urology nurses (2012) evidence based guidelines for best practice in urological health care: catheterisation indwelling catheters in adults, urethral and suprapubic

European Association of Urology nurses (2013) evidence based guidelines for best practice in urological health care: catheterisation urethral intermittent in adults.

Royal College of Nursing (2012) catheter care: RCN guidance for nurses

FURTHER READING

NICE (2012) Infection: Prevention and control of healthcare-associated infections in primary and community care

SIGN (2012) Management of suspected bacterial urinary tract infection in adults

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