Chapter 18: Fistulae

Dirk De Ridder, MD, PhD, FEBU

ICI 7

ICS 2021 MELBOURNE ONLINE

1

ICI 7

Affiliations to disclose†:

none

† All financial ties (over the last year) that you may have with any business organisation with respect to the subjects mentioned during your presentation

Funding for speaker to attend:

- [x] Self-funded
- [ ] Institution (non-industry) funded
- [ ] Sponsored by:

2

Chapter 18: Fistula

Dirk	**De Ridder**	Belgium
Judith	Goh	Australia
Tamsin	Greenwell	UK
Matthieu	Loposso	DR Congo
Sherif	Mourad	Egypt
Christopher	Payne	USA
Ajit	Vaze	India

3

Outline

- Vesicovaginal fistula
  - Obstetric
  - Non-obstetric
- Fistula involving the GI tract
- Ureteric fistula
- Urethral fistula

4

Epidemiology

- **Obstetric fistula**
  - 3 Systematic reviews

Author	Year	Region	Incidence	Prevalence
Adler et al. (3)	2016	Africa, South Asia	0,29% (95%CI: 0,00-1,07)	5,68% (95%CI: 5,04-6,40)
Swain et al. (2)	2020	developing countries		1/1000 to 1.57/1000
Cowgill et al. (6)	2015	Africa, South Asia	0-4.09/1000	0-81/1000

  - Risk factors:
    - age at first marriage,
    - short stature
    - pregnancy with a male child rather than a female child
    - failure to attend ante-natal care
    - low socio-economic status, lack of employment
    - illiteracy

5

Epidemiology

- **Non-obstetrical fistula**
  - Post gynecological surgery
    - Post- hysterectomy 0.1 and 4%.
      - 1 in 788 for all types of hysterectomy
      - 1 in 540 for abdominal hysterectomy for benign disease
      - 1 in 896 for vaginal hysterectomy for benign disease (excluding prolapse)
      - 1 in 3861 following vaginal hysterectomy for prolapse
    - Post caesarean section
      - Changing pattern in developing countries (13.5% of fistula repairs as consequence of caesarean section, Raassen et al.)
  - Cancer related fistula
    - Local invasion
    - Surgery
    - Radiotherapy
    - Ablation therapy (cryo, HIFU, ….)

6

Classification of the fistula

- Waaldijk classification and Goh classification are most widely used
- Both follow the same principles
  - Fistula location relative to the urethral closing mechanism
  - Fistula size
- Circumferential fistula poorly described in Goh's classification
- Scarring not described in Waaldijk's classification

7

Classification & predictive value

	Waaldijk	Goh	Tafesse
Fistula localisation	+	+	+
Fistula size	+	+	+
Closing mechanism	+	+	+
Scarring	_	+	+/-
Anal sphincter	+	_	-
Relates to surgical approach	+	+	+
Relates to outcome	+	+	+
Inter observer variability	?	+	-
Bladder capacity	-	-	+
Predictive accuracy	0.51	0.62	0.60

Adapted from Frajzyngier et al. AJOG 2013

8

Classification: comparative study

- Frajzyngier et al.,2013 compared in an elegant prospective cohort study the classification systems of Lawson, Tafesse, Goh, Waaldijk and the WHO
  - They included 1274 patients in 11 centres.
  - The predictive accuracy for fistula closure was
    - 0.63 for the WHO score
    - 0.62 for Goh
    - 0.60 for the Tafesse score
  - The Waaldijk and Lawson systems fared worse.
  - suggest to include other items in a prognostic scoring systems such as HIV status, malnutrition, malaria, genital cutting etc…
- Streit-Cieckiewicz et al, 2021.
  - None of the classification systems is able to predict successful closure

9

Classification

The use of a classification system is recommended* .	**A**
Long-term follow up of fistula patients is recommended in order to study the outcome of both conservative and surgical management and, in particular, to determine its effect on quality of life.	A
When reporting the outcome after fistula repair, authors should make a clear distinction between fistula closure rates and post-operative incontinence rates, specifying the time at which follow-up was carried out.	A
A routine post-operative assessment of obstetric fistula needs to be developed to accurately determine the incidence and severity of any ongoing incontinence.	A

* Waaldijk, Gho, Taffesse, Panzi

10

Recommendations

An indwelling catheter with free urinary drainage should be instituted for all patients who have a recent VVF.	C
When fistula surgery is necessary the woman must be assured of the surgeon's competence to carry out her procedure.	C
It is recommended to use a classification system (Goh, WHO, Tafesse, Panzi)	B
There is a need to compare different surgical approaches to fistula within the context of randomized controlled trials	C
Long-term follow up of fistula patients is recommended in order to study the outcome of both conservative and surgical management and of the quality of life.	A
When reporting the outcome after fistula repair, authors should make a distinction between fistula closure rates and post-operative incontinence rates, specifying the time at which follow-up was carried out.	A
If the urethra is involved in the fistula, an anti-incontinence procedure should be carried out at the time of the fistula repair	C
Interposition flaps are not necessary at first vaginal repair	C
There is no difference in outcome for vaginal, abdominal, laparoscopic or robotic approach	C

11

Evidence statements radiotherapy related fistula	
The rate of fistula formation following radiotherapy for gynaecological cancer appears to be of the same order as that following surgical treatment	3
The risk of fistula formation following radiotherapy for locally recurrent malignancy is higher than following its use in primary disease	3
The use of neoadjuvant or adjuvant therapies is likely to be associated with a greater risk of fistula development than the primary treatment alone	3
The development of fistula following radiotherapy for primary treatment should trigger a search for evidence of tumour recurrence	4

12

Radiation fistula

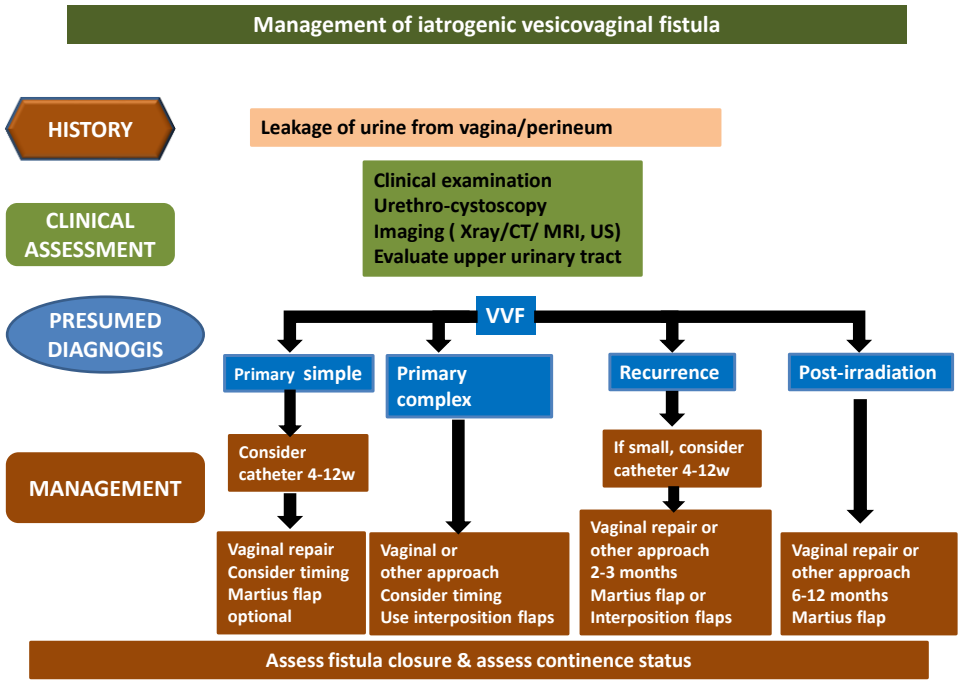
Whilst diversion is used more widely in radiation-associated fistulae of all types, there is low level evidence that repair procedures can achieve fistula closure and continence in selected cases	C
Where urinary and/or faecal diversion is required, attempts should be made to avoid using irradiated tissues, and to minimise the potential for anastomotic complications	C
There is low level evidence to support the use of interposition grafts when repair of radiation-associated fistula is undertaken	C
In patients with intractable urinary incontinence from radiation-associated fistula, where life expectancy is very short, ureteric occlusion might be considered; there is insufficient evidence to recommend any particular technique	D

13

GI tract fistula

There is limited evidence to support a non-surgical or conservative surgical approach in colo-vesical fistulae where there are minimal symptoms or evidence of limited bowel involvement	**C**
There is only limited level evidence to support a non-surgical approach in colo-vesical fistula associated with diverticular disease; nevertheless, in the frail elderly, or in patients who have limited symptoms of urinary infection or urinary diarrhoea it is reasonable to consider a trial of conservative management	C
There is evidence that infliximab is efficacious in the treatment of external fistulae, but only very limited low level evidence of efficacy in urinary fistulae in association with Crohn's disease	B/D
A one-stage approach to surgery for intestino-vesical fistulae is appropriate in many cases	B
A laparoscopic approach to one-stage management has been shown to be feasible, although there is no high level evidence to allow comparison of outcomes with open surgery	C

14



15

Ureterovaginal fistula

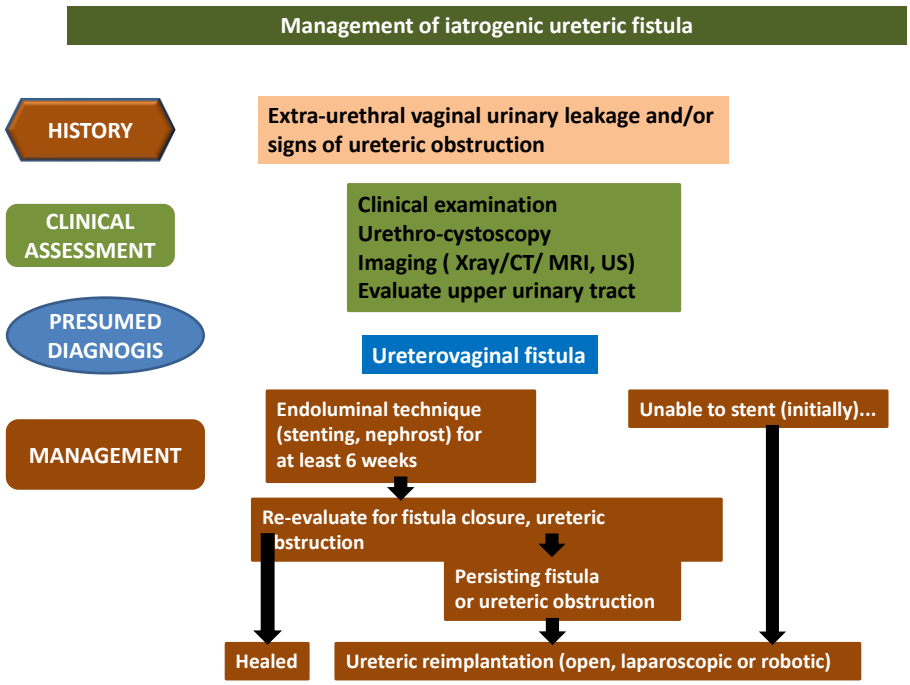
Evidence table	EL
Prophylactic ureteric stent insertion does not reduce the risk of ureteric injury during gynecological surgery	2
Uretero-arterial fistula are associated with a high mortality	3
The routine use of prophylactic cystoscopy with dye testing at gynaecological surgery has high sensitivity, specificity and negative predictive value in the detection of ureteric injury, although false positive tests do occur.	3
Urogenital fistula is more frequent amongst women with hysterectomy	2

16

Ureterovaginal fistula

Recommendations	
Do not use ureteric stents as prophylaxis, unless the ureters cannot be identified otherwise	C
Analyse fluid leak after pelvic surgery for creatinine level	A
Suspect fistula after pelvic surgery if fluid leak or renal dilatation occurs	A
Conservative and endoluminal treatment as initial treatment	B
Persistent ureterovaginal fistula should be repaired by open, laparoscopic or robotic techniques according to availibility and competence	A
Fistula involving the GI tract should be repaired as early as possible	C
Surgeons should be competent at identifying, preserving and repairing the ureter	A

17



18

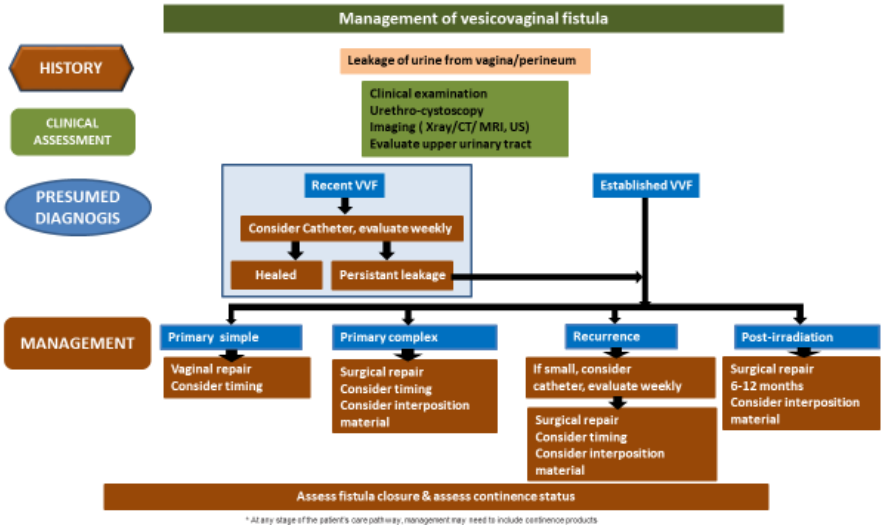
Urethrovaginal fistula

Urethrovaginal fistula are preferably treated by a vaginal approach	C
A variety of autologous tissue interposition techniques have been described, but their value remains uncertain	C
Urethrovaginal fistula repair may be complicated by stress incontinence, urethral stricture and urethral shortening necessitating long-term follow-up	C

19

General recommendations	
Perioperative antibiotic prophylaxis should follow local policies	D
Time the fistula surgery to the individual patient and surgeon. There is no proven benefit to delayed repair of vesicovaginal fistula but repair can be undertaken as soon as any oedema, inflammation, tissue necrosis, infection are resolved	B
Surgeons involved in fistula surgery should have appropriate training, skills, experience to select an appropriate procedure for any patient. There is no benefit of any one technique over any other	D
The majority of vesico-vaginal and all urethro-vaginal fistulae can be repaired vaginally, regardless of aetiology	C
Where concurrent ureteric re-implantation or augmentation cystoplasty are required, and abdominal approach is essential	D
A variety of interposition grafts are described for use in either abdominal or vaginal procedures, although there is no high level evidence to support their use	C
Conventional and robotically-assisted laparoscopic approaches have both been shown to be feasible in selected cases; the place of these techniques is not yet clear	C

20


Management of vesicovaginal fistula
HISTORY
Leakage of urine from vagina/perineum
CLINICAL ASSESSMENT
Clinical examination
Urethro-cystoscopy
Imaging (Xray/CT/ MRI, US)
Evaluate upper urinary tract
PRESUMED DIAGNOGIS
Recent VVF
Consider Catheter, evaluate weekly
Healed
Persistant leakage
Established VVF
MANAGEMENT
Primary simple
Vaginal repair
Consider timing
Primary complex
Surgical repair
Consider timing
Consider interposition material
Recurrence
If small, consider catheter, evaluate weekly
Surgical repair
Consider timing
Consider interposition material
Post-irradiation
Surgical repair
6-12 months
Consider interposition material
Assess fistula closure & assess continence status
* At any stage of the patient's care pathway, management may need to include continence products

21