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The five common symptoms of anal disease

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Pain

This is usually caused by:

- anal fissure
- peri-anal abscess
- prolapsed thrombosed piles
- peri-anal haematoma
- cancer invading the sphincters.

Anal fissure

This typically presents with pain on defecation and blood spotting on toilet paper. These symptoms are due to an ischaemic mucosal ulcer within a high-pressure sphincter. The fissure is usually visible at inspection of the gently distracted anus (Fig. 1). Defecation is exquisitely painful, 'it's like passing razor blades', resulting in a cycle of fear of defecation, constipation, mucosal trauma and sphincter spasm. Digital examination is intolerable and should be avoided. Management requires laxatives, analgesia and internal sphincter relaxation, which can be achieved with a nitrate ointment or a limited internal sphincterotomy. Nitrate ointment applied to the anus at least 3 times daily for 6 weeks is appropriate first-line treatment. A mono-nitrate ointment avoids the side-effect of headaches associated with tri-nitrates. Persistent symptoms or atypical features, such as rolled edges or a lateral location, require examination under anaesthetic (EUA) and biopsy. Botox has not been shown to be superior to topical therapy.^[1]

Peri-anal abscess

These develop from an obstructed anal crypt gland at the dentate line. They are named according to their location: ischio-rectal (ischio-anal), peri-anal or intra-



Fig. 1. Anal fissure with sentinel tag.

anal. The symptoms are severe pain with point tenderness. Examination will reveal an obvious abscess or tender induration and swelling. An internal or submucosal abscess is an unusual variant, which is frequently missed because the peri-anal region appears normal. Digital examination is exquisitely painful and mandates EUA. The management remains incision and drainage, with antibiotics occasionally used as an adjunct to surgery in a few selected patients. An important point to remember when deciding to prescribe antibiotics is that, unlike other cutaneous abscesses, the causative organisms are enteric flora and not skin flora. Antibiotics that cover Gram-negatives and anaerobes (e.g. co-amoxiclav) are required.

Acutely prolapsed thrombosed piles

The primary symptom is severe pain, often requiring hospital admission. Examination reveals a tender, oedematous, haemorrhoidal mass protruding from the anus (Fig. 2), which is often circumferential and occasionally mistaken for a rectal prolapse. Treatment can be conservative or surgical. A randomised control trial comparing surgery to conservative management demonstrated that conservative management is appropriate for many patients.^[2]



Fig. 2. Prolapsed thrombosed piles.

Peri-anal haematoma

This is caused by the rupture of a subcutaneous blood vessel in the peri-anal region and is sometimes incorrectly called an 'external pile.' This purple pea-sized swelling is tender but not inflamed. It is easily managed by scalpel incision after instillation of local anaesthetic via an insulin syringe. Success is confirmed by the expression of a blood clot and a grateful patient. Scalpel incision should be reserved for acute lesions as delayed presentation results in a more diffuse swelling which is best managed conservatively.

Anorectal cancer

Occasionally a low-lying cancer arising from the anus or rectum can cause severe anal pain due to sepsis or sphincter invasion (Fig. 3). However, it is important to realise that the absence of pain does not exclude cancer. Any abnormality palpable in the anal canal must be regarded as cancer until proven otherwise. Internal haemorrhoids are not palpable on digital examination and are diagnosed with a proctoscope.



Fig. 3. Fistula with seton and abscess scar.

Prolapse

Three things may prolapse through the anus – polyps, the rectum and haemorrhoids, which are the most common. The treatment of prolapsing haemorrhoids is either rubber-band ligation as an outpatient or surgical removal in theatre. Surgical removal provides durable results, but at the cost of significant postoperative pain and the possibility of surgical complications. Rubber-band ligation is ideal for grade 2 and 3 haemorrhoids and generally provides excellent results, with very low morbidity (Table 1).^[3]

Table 1. Clinical findings and treatment

Classification	Clinical findings	Treatment
Grade 1	Bleeding but no prolapse	Stool softeners, reassurance
Grade 2	Prolapse but reduces spontaneously	Rubber-band ligation
Grade 3	Prolapse requiring manual reduction	Rubber-band ligation or haemorrhoidectomy
Grade 4	Permanent prolapse	Haemorrhoidectomy

Rectal prolapse is most commonly seen in elderly women and occasionally in young women, but is rare in men. The management is surgical, which can be via a perineal approach or an abdominal rectopexy, which is well suited to the laparoscopic approach.

Discharge

This is a symptom of anal fistula, mucosal/haemorrhoidal prolapse or incontinence, which is beyond the scope of this article. Hidradenitis and pilonidal sinus are not usually in the immediate peri-anal region but should also be considered.

Anal fistulae present a major proctological challenge. The primary symptom is a purulent discharge from an external peri-anal opening. It is painless unless associated with an underlying abscess. Fistulae result from a peri-anal abscess forming a granulation-lined tract between the anal canal and the peri-anal skin. The external



Fig. 4. Anal squamous carcinoma.

opening is usually easy to identify and gentle pressure around the lesion will often produce a bead of pus. These lesions can be associated with a cycle of abscess formation, spontaneous drainage and persistent discharge. Diagnosis of a cryptoglandular fistula requires exclusion of Crohn's disease, tuberculosis, or cancer. The majority of fistulae are superficial and can be laid open with the division of an inconsequential amount of sphincter. In complex fistulae this approach can result in incontinence and other strategies are required. These include long-term seton drainage and/or fistulae repair such as mucosal advancement flap (Fig. 4). A steady stream of new repair techniques is testimony to the demands of this challenging condition.

Bleeding

Bleeding per rectum (PR) is a common complaint, which can range from a few spots on the tissue to frank blood in the toilet. Haemorrhoids classically present with bright red painless bleeding. Fissures and bleeding due to excessive wiping (which causes micro-abrasions) will result in blood on the paper. Bleeding from the rectum or more proximally will present as altered blood mixed with the stool and mandates colonoscopy. The common causes are cancer, colitis, a diverticular bleed or angiodysplasia. The major problem with PR bleeding is trying to distinguish between those patients who can be safely diagnosed as having bleeding from haemorrhoids or another minor peri-

anal complaint, and those with an underlying sinister cause. Unfortunately both cancer and haemorrhoids are common and can co-exist.

All patients with anorectal bleeding require a careful history, digital examination, proctoscopy and sigmoidoscopy. If the patient cannot tolerate this, then fissure or cancer is likely. A suspicion of cancer mandates an EUA. When a fissure is confidently diagnosed, an examination can be avoided at the first consultation. A failure of fissure to respond to topical therapy also mandates an EUA. Remember 'piles are impalpable'.

Indications for colonoscopy in patients with rectal bleeding:

- no local cause identified
- a patient 50 years or older
- any alert symptoms:
 - change in bowel habit
 - loss of weight
 - iron deficiency anaemia
 - family history of colorectal cancer.

The yield of sinister pathology in patients under 50 is low. However, sinister findings are possible in this group and a high index of suspicion must be maintained.

Itch

Pruritus ani refers to itching of the anus. This troublesome symptom can be caused by many conditions but is most commonly self-inflicted. Over-zealous cleaning can cause micro-abrasions of the delicate peri-anal skin and removal of protective oils secreted by the anal glands, resulting in a cycle of inflammation, irritation and itch. History and examination will reveal any underlying pathology. Particular attention should be paid to a history of dermatological conditions and the use of potential allergens. Examination should focus on excluding anatomical abnormalities like mucosal prolapse, skin tags, etc.

'The anus thrives on neglect' is a useful adage when treating pruritus. Patients should be

discouraged from repeated wiping and over-cleansing. Washing using a hand shower, sponge or cotton cloth should be encouraged. Soap, topical preparations, toilet paper and tight-fitting garments are discouraged.^[4]

Conclusion

- Piles are impalpable.
- Digital examination is contraindicated in acute anal pain.
- Unexplained rectal bleeding requires colonoscopy.
- Peri-anal abscess requires surgery.
- Cancer and haemorrhoids can co-exist.
- Cancer can occur in the young.
- ‘The anus thrives on neglect.’

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Organ donation and transplantation in South Africa – an update

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South Africa has one of the highest incidences of renal failure in Africa. It is estimated that we now have over 5 000 patients with end-stage renal failure, and more than 2 500 of these patients are awaiting transplantation. Transplantation is more cost-effective and provides a much

better quality of life for these patients than dialysis. But transplantation in South Africa is far more than just kidney transplantation. Liver transplantation has become more common over the last 10 years, with Donald Gordon Hospital expanding their programme and now also offering living-related liver transplantation. In the Western Cape the liver transplant programme is based at Groote Schuur Hospital and Red Cross Children’s Hospital. A smaller kidney-pancreas programme is running at Donald Gordon Hospital – especially useful to type 1 diabetic patients with renal failure. Heart transplantation takes place in Johannesburg and Cape Town and lung transplantation forms a small, but important, part of the country’s solid organ transplantation programmes.

How do we decide who gets on to the deceased donor waiting list for organ transplantation?

In most regions there is now a shared waiting list between state and private sector units for all solid organs. When a patient approaches end-stage renal failure and glomerular filtration rates are less than 10 ml/kg/h, the patient is eligible for a kidney transplant. However, the potential candidate must be fit for such a procedure from a general and cardiac point of view as well. Only patients who can tolerate surgery and postoperative immunosuppression should be listed. Waiting time for a kidney will vary according to the patient’s blood group. As O blood group is the most prevalent among potential recipients, their waiting time is the longest. O blood group livers and hearts are often used for patients with other compatible blood groups, but because of lengthy kidney transplant waiting lists only O-positive recipients are cross-matched against O-positive deceased donors.

Patients are presented at a panel meeting, which consist of physicians, surgeons, transplant co-ordinators and other nursing staff as well as social workers and psychologists. In the state sector, where dialysis is limited, patients will only be accepted for dialysis if they are also good transplant candidates. In the private sector there are patients on chronic dialysis programmes who are not eligible for transplantation.

For kidney transplantation we have now accepted a points system in most regions. Patients are allocated points according to the following criteria:

- time on the waiting list
- age
- previous transplants
- sensitisation
- other medical issues, e.g. a lack of vascular access on dialysis.

When a donor becomes available all suitable recipients of that blood group will be cross-matched against the donor and the organ will be allocated according to the position on the waiting list after cross-matching.

For liver and heart transplantation the waiting list is much shorter, and physicians are able to allocate according to the patient’s current clinical condition and urgency.

Shortage of organs and ways to expand organ utilisation

Declining numbers of deceased donors is a big problem in transplantation in South Africa. Despite an increasing waiting list for solid organs, the number of transplants annually remains stable in South Africa. In many centres living donation has become the mainstay of kidney transplantation. Although this is an acceptable alternative, putting a living donor at risk is not an ideal

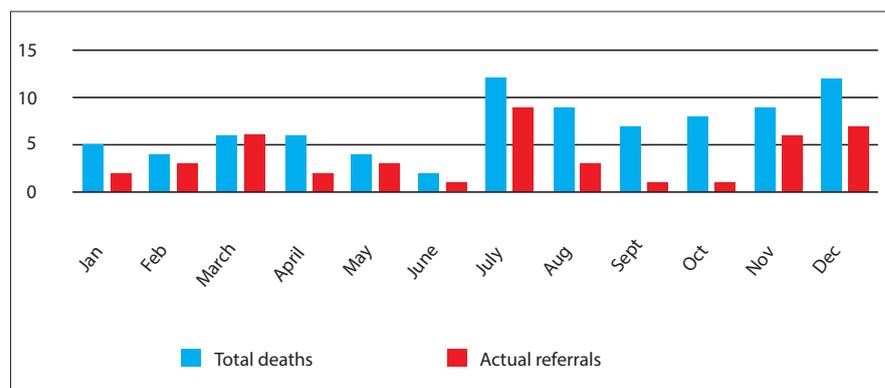


Fig. 1. Total deaths versus actual referrals, Groote Schuur Hospital (2007).

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way of increasing organ availability. With the extent of renal disease present in our population, transplants will only increase if deceased donation continues to grow. It is the ethical responsibility of every medical doctor to refer potential deceased-organ donors to transplant co-ordinators.

At Groote Schuur Hospital, the number of referrals made for deceased donation has declined over the last 10 years. This is a result of more aggressive treatment of head injury and other neurosurgical patients with a good prognosis and an earlier withdrawal of treatment in similar patients with a poor prognosis. Most suitable deceased donors have a history of trauma to the head or medical conditions affecting the brain, such as subarachnoid haemorrhage or isolated brain conditions.

South Africa currently has the potential to almost double or triple our current number

of 300 deceased donors per year. A small unpublished study comparing head injury deaths with donor referrals was done by the author at Groote Schuur Hospital in 2007. Results showed that a significant number of potential donors were not referred to transplant co-ordinators for discussion with the family (Fig. 1).

Table 1 reflects a further breakdown of referrals of potential organ donors from the different units to the transplant co-ordinators. At Groote Schuur Hospital these referral rates vary tremendously, with the trauma surgeons referring most of the potential donors. The option of having a hospital policy of required referral is currently being explored. This option would improve referral numbers, as it will force doctors to refer every potential donor to transplant co-ordinators. At Tygerberg Hospital fewer than 5 brain-death donors are certified and referred per year. The potential to expand organ donation

and referral of brain-death donors in the Western Cape is huge.

Because of a shortage of organ donors in South Africa constant efforts are made to improve public education around organ donation and brain death. However, education among medical professionals is still lacking.^[1,2] The introduction of a lecture on organ donation and transplantation in both the fifth and sixth year of study from 2009 at the University of Cape Town should help address this problem.

Consent rates for organ donation are influenced by religion, socio-economic status and race. Consent rates in the private sector, where the higher socio-economic groups are situated, are much better than in the state sector. In a recent comparison consent rates in the private sector were between 80% and 100% (Table 2). In the state sector consent rates are as low as 30% (Table 3).

Table 1. Donor referrals at Groote Schuur Hospital

	1991	1996	2001	2006	2011	Total
Trauma unit	26	42	40	32	50	190
Emergency unit	7	1	3	1	7	19
Neurosurgical ICU	20	10	1	3	0	34
Other ICU	5	3	7	5	3	23
Other	3					3
Total	61	56	51	41	60	

Table 2. Private sector consent rates

Private sector Cape Town	Black		Coloured		White	
	Number of families asked	Consent given N (%)	Number of families asked	Consent given N (%)	Number of families asked	Consent given N (%)
2001	0	- -	3	1 (33.3)	8	7 (87.5)
2006	1	1 (100)	4	3 (75)	12	12 (100)
2011	2	0 (0)	3	3 (100)	9	8 (88.8)

Table 3. State sector consent rates

GSH	Black		Coloured		White	
	Number of families asked	Consent given N (%)	Number of families asked	Consent given N (%)	Number of families asked	Consent given N (%)
1991	7	2 (28.5)	31	18 (58.0)	7	5 (71.4)
1996	13	7 (53.8)	21	17 (80.9)	10	8 (80.0)
2001	17	6 (35.2)	19	10 (52.6)	6	5 (83.3)
2006	7	0 (0)	19	6 (31.5)	2	2 (100)
2011	28	9 (32.1)	12	4 (33.3)	0	- -

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The Organ Donor Foundation of South Africa is constantly trying to improve consent rates among the public through their educational outreach programmes. But it remains the responsibility of transplant professionals to think of new ideas to get more donors and to make sure all referred donors are utilised.

Increasing organ donation and transplantation by using marginal donors

Many new programmes have been introduced to improve organ donor numbers. The use of marginal donors is being explored worldwide and, as a result, the threshold for using patients with pre-existing medical conditions as organ donors is getting lower.

South Africa has a huge HIV-positive population and for this reason an HIV-positive-to-positive transplant programme was started at Groote Schuur Hospital in 2008 for HIV-positive patients with end-stage renal failure.^[3,4] To date 22 patients have received transplants, with good outcomes.

Donation after cardiac death – the way forward in South Africa?

One way of increasing organ donation dramatically is to use patients after circulatory death in a donation after cardiac death (DCD) programme. Patients who are not brain dead and possibly will not become brain dead can still give consent for organ donation after cardiac death if they die of a suitable cause. In most European countries this type of organ donation has expanded dramatically over the last 10 years. In Spain

and the USA, DCD donor rates now equal the traditional brain-dead donor rates.

In the case of a dismal prognosis and a decision to withdraw treatment from a patient, the treating physician is asked to consider referring the patient to the transplant team as a DCD donor. This is then followed up with a conversation with the family and consent is obtained for organ donation after cardiac or circulatory death. The family does not need to understand the concept of brain death – they are only asked for permission to use the patient as an organ donor once the patient's heart has stopped and circulation has ceased.

After death certification the patient is taken to theatre, where the kidneys are removed and flushed with cold Euro Collins or Brett Schneider solution. A warm ischaemic time between 10 and 30 minutes is acceptable. Cold ischaemic times should be kept to a minimum. Machine preservation has improved the outcome of these kidneys elsewhere, but this is not yet available in South Africa.

After the family has given consent, a theatre is opened and prepared for organ retrieval. Inotropes, fluids and ventilation are stopped in the ward or unit. At Groote Schuur Hospital the family are reassured that this is not done because the patient will be an organ donor, but that this is our normal policy in the case of head injury, namely that, because of resource limitations, we do not treat patients with a dismal prognosis with ventilation or aggressive treatment. However, this should be possible in the private sector as well, because

the withdrawal of treatment will be discussed with the family as part of the consent process.

The retrieving surgeon awaits the death of the patient in theatre, ready and scrubbed in order to shorten the warm ischaemic time. The operating theatre needs to be ready and prepared so that the body is transported to theatre immediately after death. It is generally acceptable to allow the family 5 minutes with the deceased before the body is moved to theatre. For practical purposes this waiting period has a 2-hour cut-off time at Groote Schuur Hospital. If the potential donor does not arrest in this 2-hour period, organ retrieval after death is abandoned.

Although it is logistically a challenge, this option is an excellent way of increasing organ donation. At Groote Schuur Hospital we have done 15 transplants from DCD donors to date.

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SINGLE SUTURE

Polio: The last salvo

Will this be the end of an old foe? A new global assault on polio will involve the biggest roll-out of a vaccine ever attempted.

Until now, the World Health Organization's eradication drive has used a vaccine made from weakened live virus. It is cheap and effective, but the virus in it can sometimes revert to causing disease – and spread. Circulating vaccine-developed polio viruses (cVDPV) now cause more outbreaks of polio than wild viruses.

The original plan was for every country to stop using live vaccine when wild polio disappeared, switching to a killed vaccine that would protect children as cVDPV died out. But if either virus returns after that, we will need live vaccine to contain it. By then drug firms will not be making it, says Bruce Aylward, head of the WHO's polio programme.

The new plan, launched this week, is for the 140 countries at most risk of the polio resurgence to start giving the vaccine once the wild virus is largely gone. They will also use live vaccine effective against 2 of polio's 3 strains. Virtually all cVDPV is type 2 – which was eradicated in the wild in 1999. By using live vaccine made with types 1 and 3 countries can maintain immunity while cutting off the source of cVDPV.

All 140 countries will have to switch vaccines at the same time.

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