CH-11 Hernia, haemorrhoids, varicose veins and the small surgeries

HEALING after the FALL, research library, CH-11

Researched 10 October 2026 by Claude Opus agent for THRIVING after the FALL, Book Four. Library document, unverified.

How to read this

This report covers the commonest lumps, bulges and bleeds a healer meets: the groin hernia, piles, varicose veins, and a set of small operations. Most are not fatal. The few that kill are the strangulated hernia, the septic anus after banding, the varicose vein that bleeds out at night, and the rectal cancer called piles. The report is about telling those few from the many, and about which repairs a trained non-physician at a district infirmary can learn.

Other library documents carry ground this report cites and does not repeat: the strangulated hernia, taxis and laparotomy (THRIVING library, WO-08), local anaesthetic doses and blocks (THRIVING library, WO-11), steam sterilisation in a pressure cooker (THRIVING library, WO-12), wound closure (THRIVING library, WO-03), abscess drainage (THRIVING library, WO-14) and bowel complaints near the anus (THRIVING library, CH-09). Compression bandaging and the leg ulcer belong to CH-10, and OR-07 has its own ground. Neither is written yet, so where this report touches them it says so and stops.

Where they differ, each section separates what the tradition says, what the record shows and what science infers. Unchecked claims and my own inferences are marked [VERIFY]. Village rules the owner must decide are marked [OWNER]. ## 1. Findings by section

1.1 The groin hernia: how common, and what it does when left

A groin hernia is a bulge of the belly lining, often with gut or fat inside, through a weak place in the lower abdominal wall. It is inguinal (above the groin crease, common, often reaching the scrotum) or femoral (below the crease, rarer, mostly in women, and far more dangerous).

The record. HerniaSurge gives a lifetime risk of 27 to 43% in men and 3 to 6% in women (HerniaSurge Group 2018). A village of 300 with about 150 men can expect some 40 men and four or five women to have one in their lives. In poor rural places hernias come earlier and grow bigger. In rural Ghanaian men in 1978 prevalence was 7.7%, two thirds reached the scrotum against 7% in the United Kingdom, mean age was 34 against 62, and 64% had limits on their activity, of whom 16.3% could not work (HerniaSurge Group 2018). After the Fall, with heavy labour and no surgery, the Ghanaian pattern is the one to expect. [VERIFY: inference]

Most hernias slowly grow and ache. A few become stuck (incarcerated) and some of those lose their blood supply (strangulated), which kills unless the gut is freed in time. Elective repair carries a mortality of 0.2 to 0.5%, emergency repair 4 to 5.5%, ten to twenty times as high (HerniaSurge Group 2018). A Scottish cohort of 6,165 acute groin hernias had a 30-day mortality of 3.1%, with bowel removed in 14.7% of femoral and 3.5% of inguinal cases (Brown 2023). In Lilongwe, Malawi, 5.4% of patients with irreducible inguinal hernias died, and a delay of 24 hours or more

multiplied the risk of death by eleven (THRIVING library, WO-08). ### 1.2 Watchful waiting and the strangulation risk

The record. The American trial randomised 720 men with painless or nearly painless inguinal hernias to repair or waiting for 2 to 4.5 years. Pain limiting activity was similar (5.1% against 2.2%), 23% of the waiting men crossed to surgery, mostly for pain, and acute incarceration occurred at 1.8 per 1,000 patient-years (Fitzgibbons 2006). Long follow-up estimated that 68% would cross to surgery within 10 years (79% of those over 65), with three emergency operations and no deaths (Fitzgibbons 2013). A British trial of 160 men over 55 found no difference at 12 months (O'Dwyer 2006). HerniaSurge judges waiting safe for men with minimal symptoms (HerniaSurge Group 2018).

The older record is less calm. In London, Gallegos and colleagues followed 476 groin hernias and counted 34 strangulations. Inguinal hernias strangulated in 2.8% by 3 months and 4.5% by 2 years. Femoral hernias strangulated in 22% by 3 months and 45% by 21 months. Risk was highest in the first three months after the hernia appeared (Gallegos 1991).

Inference. The trial men would have been operated on the day their hernia stuck. After the Fall the same incarceration rate meets a 24-hour delay and no laparotomy, which is where the Malawi mortality comes from. [VERIFY: inference] The lesson survives: a small, painless, reducible inguinal hernia in a man can be watched. A femoral hernia, a hernia in its first months, and a hernia in a woman or infant cannot. Female sex, femoral hernia and earlier admission for the hernia all raise the risk of incarceration (HerniaSurge Group 2018). ### 1.3 The truss

What the tradition says. The truss is a pad held over the hernia opening by a spring or belt. An Egyptian record attributes a pharaoh's death to strangulated hernia, and trusses were in use in sixteenth-century Europe, described by Caspar Stromayr and Ambroise Paré (secondary summaries only [VERIFY]). For three hundred years before safe surgery it was all most men had.

What the record shows. The truss does not cure. By 1893 English surgeons agreed that a hernia not easily held by a truss should be operated on (Harsant 1893). A pharmacist's guide sets the surviving rules: only a reducible hernia, fitted lying down after reduction, tested with a cough, put on before rising and removed at night, renewed yearly, and any pain treated as possible strangulation (Bellingham 2002). It gives no outcome data. The one British paper asking whether a truss benefits the patient (Law and Trapnell 1992) could not be read, and I found no trial of a truss against nothing. The harms appear in case reports and teaching texts: a badly fitted pad lets the hernia slip out beneath it, and pads can cause adhesions, thin the tissues and press on the cord to the testis (secondary summaries [VERIFY]). Worst, a man in a truss may ignore early strangulation because he feels protected.

Inference. The truss is a comfort device that may let a labourer work. It probably does not lower strangulation and may hide it. [VERIFY] Grade D for symptom control, X over a hernia that does not fully reduce. ### 1.4 Taxis and the stuck hernia

A stuck hernia belongs to (THRIVING library, WO-08), section 1.9 and Protocol 5. In summary only: gentle sustained pressure (taxis) succeeds in about two thirds of adults in one series and far fewer in others, and in 80 to 85% of children. It is allowed only within about 24 hours of sticking and only without signs of strangulation (red, hot, very tender skin, vomiting, fever, a swollen belly). Forced taxis can return dead gut to the belly, or push back the whole sac still strangling it. After successful taxis, repair within days. A guideline meta-analysis found operation within six hours of onset reduced bowel resection, on very low quality evidence (Farrell 2025). ### 1.5 The old repairs: Bassini, Shouldice and the record without antibiotics

The record. Edoardo Bassini of Padua first presented his repair in 1887. His 1889 monograph described 262 operations with recurrence of about 2.7% over up to four years (Bassini 1889, through secondary summaries [VERIFY]). It sews muscle to the inguinal ligament, a tension repair. In 1893 W. H. Harsant of Bristol summarised the American surgeon Marcy's collection of about 3,000 "radical cure" operations by Bassini, Championnière, Schede, Banks, Park and Marcy, with mortality under 1% (Harsant 1893). This was after Lister's antisepsis but before antibiotics, so it is

the best record of what a careful clean repair does with no drugs.

The Shouldice repair, from Toronto after 1945, is a layered tension repair done by specialists. The Shouldice Hospital requires about 300 supervised cases before a surgeon works alone (HerniaSurge Group 2018). A Cochrane review found recurrence of 3.6% after Shouldice against 0.8% after mesh (odds ratio 3.80, six studies, 1,565 patients), but 4.4% against 6.9% compared with other non-mesh repairs (Amato 2012). Mesh roughly halves recurrence against non-mesh repair (Lockhart 2018, as cited in Ashley 2021).

Inference. A tension repair needs no mesh but more skill. A district healer doing 20 hernias a year will not match Shouldice, and should use mesh if it can be sterilised. Without mesh, a Bassini-type repair still beats a strangulation. [VERIFY] ### 1.6 Lichtenstein and the tension-free mesh

The record. In 1989 Irving Lichtenstein and colleagues in Los Angeles published the "tension-free hernioplasty", a flat sheet of polypropylene mesh sewn over the back wall of the canal under local anaesthesia, with the patient walking home the same day (Lichtenstein 1989, not read in the original). Their own series reported recurrence near 0.1%, though independent series are higher (secondary summaries [VERIFY]). The Lichtenstein repair is now the standard open repair worldwide. For low-resource settings HerniaSurge recommends Lichtenstein repair under local anaesthesia with low-cost mesh, done in high volume (HerniaSurge Group 2018). It also reports that mesh is used in only 0 to 5% of repairs in low-resource settings, mostly because of cost.

Chronic pain after groin repair affects 10 to 12% and is debilitating in 0.5 to 6% (HerniaSurge Group 2018). That pain is the main argument for leaving a small painless hernia alone.

1.7 Mosquito-net mesh

What the record shows. Mosquito-net mesh began in India and Africa, where surgeons cut sheets from cheap netting and sterilised them.

- Tongaonkar and colleagues repaired 359 hernias at four Indian centres with an autoclavable copolymer net. Stitch abscess occurred in 4.7%, with no mesh rejection and one recurrence (0.27%) at 1 month to 5 years. A piece cost 45 paise against Rs 1,666 for commercial mesh (Tongaonkar 2003, abstract only, and Kingsnorth 2022).
- In Burkina Faso, 40 hernias were randomised to nylon net or commercial mesh, with no difference at 30 days, at $0.0043 against $108 (Freudenberg 2006). In goats at Mbarara, Uganda, nylon net was weaker and more inflammatory but usable (Wilhelm 2007).
- In Ghana, 106 polyester net meshes in 95 patients gave five haematomas and two infections, and sterilising and packing cost $1.46 per mesh (Clarke 2009). The cost per disability-adjusted life year averted was $12.88 (Shillcutt 2010).
- Polyethylene net matched lightweight commercial meshes in laboratory tests, with higher burst strength (Sanders 2013).
- The decisive trial is Löfgren 2016 in Kamuli, eastern Uganda. Of 302 men repaired by four senior surgeons by the Lichtenstein method under local anaesthesia, half received 100% polyethylene net (38.0 grams per square metre, pore 1.5 mm, under one dollar) and half a commercial polypropylene mesh ($125). At one year recurrence was 0.7% against 0, complications 30.8% against 29.7% (mostly haematoma or swelling), and superficial infection 2.8% against 4.1%, with 95.6% followed up (Löfgren 2016).
- A meta-analysis of nine studies and 1,085 patients found no significant difference from commercial mesh in complications, infection or chronic pain (Ahmad 2019). An Indian series of 400 patients reported wound infection in 3.5% (Chate 2022).

How the mesh was sterilised. In Uganda, theatre nurses washed the net in water with mild detergent, cut it to 10 by 15 cm, packed each piece separately, and autoclaved it at 121 °C for 20 minutes (Löfgren 2016). Stephenson and Kingsnorth tested netting at several steam temperatures and concluded that it can be sterilised safely at 121 °C

rather than 134 °C, but only with accurate temperature control (Stephenson and Kingsnorth 2011). The stovetop pressure cooker reaches 121 °C at 15 psi at sea level, and (THRIVING library, WO-12) Protocol 3 gives 20 minutes unwrapped and 30 minutes wrapped, warning that electric multicookers fall short.

What science infers, and the limits. The trials show that clean, correctly sterilised net in experienced hands equals commercial mesh. They do not show that any netting sterilised in any pot is safe. Löfgren's authors warn against generalising to places without their safety procedures, and note that in some African hospitals over 40% of repairs are emergencies and over 20% of patients are women, groups the trial excluded (Löfgren 2016). Three inferences of my own follow. An insecticide-treated net must never be implanted, since no study tested one. [VERIFY] Polyethylene softens not far above 121 °C, so each new roll should be test-run in the cooker before use. [VERIFY] An infected mesh usually has to come out, so mesh repair belongs only where the sterility chain of WO-12 is real. [VERIFY] ### 1.8 Who may repair: task-sharing in Sierra Leone and Ghana

What the record shows. In sub-Saharan Africa most surgery is done by general doctors and non-physician clinicians (HerniaSurge Group 2018). In Sierra Leone, Ashley and colleagues randomised 230 men to Lichtenstein repair with commercial mesh by associate clinicians (non-physicians with two years of surgical training and a one-year internship) or by medical doctors. At one year recurrence was 0.9% with associate clinicians against 6.9% with medical doctors. Deaths were 1.8% against 2.9%, all after 30 days (Ashley 2021). At five years recurrence was 5.0% with no difference by provider, and 11.2% had died of all causes (Ashley 2025). In Ghana, five-year recurrence after repair by medical doctors was 2.3% against 7.3% by surgeons, and 12% of patients had died of other causes (Beard 2024). Associate clinicians cost $250 per disability-adjusted life year averted against $411 for medical doctors (Thet Lwin 2024). In Mozambique, técnicos de cirurgia performed 10,258 operations with low postoperative mortality (THRIVING library, WO-08).

Inference. Hernia repair is teachable. People with two or three years of supervised training, doing it often, match doctors. The record does not show that an unsupervised reader of this book can. The trial clinicians had supervisors, a hospital, commercial mesh, antibiotics and blood. The romance of lay surgery is a real danger. [OWNER: who in the district may repair an elective hernia, after how many supervised repairs, and whether the village may ever operate electively.]

1.9 Anaesthesia, antibiotics and aftercare for hernia repair

Anaesthetic doses belong to (THRIVING library, WO-11). In Uganda the field block was an equal mix of lidocaine 10 mg/ml and ropivacaine 7.5 mg/ml (Löfgren 2016). In Sierra Leone it was 20 ml of lidocaine 10 mg/ml plus 20 ml of bupivacaine 5 mg/ml (Ashley 2021). WO-11 sets the ceiling for plain lidocaine at the lesser of 3 mg/kg and 200 mg, that is 20 ml of 1% for a large adult, and allows 6 mg/kg with adrenaline. A hernia block needs about 40 ml of volume. With lidocaine alone and no adrenaline, the volume can only be reached by diluting to 0.5% within the same 200 mg ceiling, which shortens and weakens the block. [VERIFY: inference]

Both trials gave one oral dose of flucloxacillin 1.5 g before surgery. HerniaSurge does not recommend antibiotic prophylaxis for average-risk open repair in low-risk settings (HerniaSurge Group 2018). After the Fall every infirmary setting may be high-risk. [OWNER: whether to spend scarce antibiotic on a single preoperative dose for every mesh repair.] Ashley's patients took diclofenac 50 mg twice daily and paracetamol 1 g four times daily for five days (Ashley 2021).

1.10 Femoral, umbilical and incisional hernias, women and children

Femoral hernia lies below the groin crease, beside the main leg vein, and is commoner in women. It strangulates in 22% within three months (Gallegos 1991) and needed bowel removal in 14.7% of emergencies in Scotland (Brown 2023). About 40% of reoperations for "recurrent" inguinal hernia in women find a missed femoral hernia (HerniaSurge

Group 2018). It should not be watched or trussed but repaired as soon as found. In pregnancy a groin swelling is often a varicose round ligament, and waiting is advised (HerniaSurge Group 2018).

Umbilical hernia in children mostly closes by about the fifth birthday and rarely sticks (secondary summaries, source not read [VERIFY]). Strapping a coin over the navel, a tradition in many cultures, does not speed closure and can blister the skin. [VERIFY] Grade D. Adult umbilical and incisional hernias (through an old scar) are usually wide-necked and safe to watch. Big incisional repairs belong to a surgeon, and I found no source to quantify them.

Groin hernia in infants is a different disease. In Ontario, 1,065 children under two waited a median of 35 days for surgery, a wait over 14 days doubled the risk of incarceration, and 11.9% incarcerated while waiting (Zamakhshary 2008). A systematic review found incarceration of 7% overall and 11% in preterm infants (Olesen 2019). Taxis usually succeeds in children (THRIVING library, WO-08), but the hernia should be repaired within days to weeks by the most skilled hand in the district. The operation is a herniotomy (tying off the sac) without mesh. [OWNER: whether the district accepts infant herniotomy by a non-physician or holds the child on taxis alone.] ### 1.11 Haemorrhoids: grades and the first rung

Piles are cushions of blood vessels at the top of the anal canal that swell, bleed and slide down. Internal piles arise above the dentate line, where the lining has no pain nerves. They are graded I (bleed, do not come out), II (come out and go back on their own), III (must be pushed back) and IV (stay out). External piles lie below that line under skin that feels everything.

What the tradition says. Nearly every tradition uses astringent washes, ointments and sitting baths. The Ebers papyrus of Egypt prescribed lotions of honey, myrrh and fat, and Hippocrates described cutting and burning (Pata 2021).

What the record shows. Fibre is the base of all treatment. A meta-analysis of seven trials with 378 patients found fibre halved the risk of symptoms not improving (relative risk 0.53) and of bleeding (relative risk 0.50) (Alonso-Coello 2006, with the Cochrane version Alonso-Coello 2005). Phlebotonics (plant flavonoids and synthetic drugs) reduced bleeding (odds ratio 0.12) and itching but not pain in 20 trials with 2,344 people (Perera 2012), and will be gone after the Fall. Warm sitz baths did not reduce pain after haemorrhoidectomy in a trial of 50 patients (Gupta 2008). They are harmless and comforting, with unproven benefit.

Inference. Fibre, water and not straining cost nothing, work, and belong to the household.

1.12 Witch hazel and horse chestnut

Witch hazel (Hamamelis virginiana, leaf and bark) is a tannin-rich North American astringent, used by Indigenous peoples and later sold as distilled "witch hazel water". I found no randomised trial for haemorrhoids. Drug references grade it "possibly effective", which is vendor grading, not evidence. Grade D. Local tannin-rich astringents are the same idea with the same weak evidence. [VERIFY]

Horse chestnut (Aesculus hippocastanum, seed) is different. A Cochrane review of 29 trials of standardised seed extract in chronic venous insufficiency found leg volume fell by 32.1 ml more than with placebo (502 patients), and leg pain improved in 63 against 44 per 100 (Pittler and Ernst 2012, through Underland 2012). The dose was 300 mg of extract twice daily, standardised to 50 mg of escin per dose. Grade A for the extract in venous disease, with no direct trial in piles. The raw seed, bark, flowers and leaves are poisonous by mouth (NCCIH 2020). Poisoning brings vomiting, diarrhoea, twitching, poor coordination, paralysis and coma (Underland 2012). The extract is made industrially to remove the poison and fix the dose, so a village cannot reproduce it. The European monograph gives a lower escin dose than the trials, a discrepancy I could not resolve (EMA 2018, search summary [VERIFY]). Lookalike danger runs both ways: children mistake the "conker" for the edible sweet chestnut (Castanea sativa), whose husk is densely spiny and whose nut has a pointed tip. [VERIFY] Grade X for any home preparation taken by mouth. ### 1.13 Rubber-band ligation

What the record shows. In 1963 J. Barron in Detroit described placing a tight rubber band around the neck of an internal pile in the clinic. The pile dies and falls off in about a week. In his series four of 200 patients bled afterwards (Barron 1963, through Pata 2021). A Cochrane review found banding as effective as excision for grade II piles with less pain and less time off work, and recommended banding first for grade II and excision for grade III or failed banding (Shanmugam 2005).

The deaths. A systematic review found 38 cases of life-threatening sepsis after haemorrhoid treatment reported in 29 papers: 17 after banding, 3 after sclerotherapy, 1 after cryotherapy, 10 after excision and 7 after stapling. Ten died. They presented with perineal sepsis, gas behind the abdomen, or liver abscess. Almost all were healthy before treatment. The warning signs were difficulty passing urine, fever and severe or increasing pain in the days after the procedure (McCloud 2006). Banding in patients on clopidogrel caused serious secondary bleeding (Beattie 2004). The band placed too low, on or below the dentate line, causes immediate agony and must be removed at once.

Inference. Banding is the best thing a district infirmary can learn for piles. It needs a proctoscope, a ligator and bands, which must be salvaged or forged and fitted with rubber rings. [VERIFY: feasibility] It is grade A for grades I to III. Its rare sepsis is unpredictable and needs antibiotics and drainage, so every patient must be told the three warning signs. Protocol 6 gives the ligation protocol.

1.14 Injection sclerotherapy with phenol in oil

History. In Chicago in 1879 Edmunds reported 3,000 haemorrhoid injections with carbolic acid in olive oil, with 9 deaths, 23 major complications (abscess, bleeding, liver embolism) and severe pain in a quarter (Pata 2021). By the 1920s, 5% phenol in oil was the standard injection.

Benefit, harm and dose. It suits small bleeding grade I and II piles. The UK label gives 2 to 3 ml of oily phenol injected under the lining at the base of each pile, with no more than 10 ml in one session. It warns of severe pain if injected too near the anal margin and of prostatic abscess if the needle goes too deep in front. It forbids use in nut allergy (because of the oil) and in children (eMC no date). Of British surgeons surveyed, 31% had seen complications, 82% of them urinary, and the authors advised against injecting front piles in men (Al-Ghnaniem 2001). Warning signs are pain, fever, and painful, blocked or bloody urine. Systemic poisoning is not expected at 10 ml of 5% (500 mg), but overdose would show as confusion, collapse and dark urine. [VERIFY]

Feasibility. Oily phenol must come from salvaged stock. This report gives no method of making it. Banding is safer and should come first. [OWNER: whether salvaged phenol is spent on haemorrhoid injection or kept for toenails and other uses (WO-12).]

1.15 Haemorrhoidectomy

In 1937 Milligan and Morgan at St Mark's Hospital in London described open excision: each pile is cut out in a V from the skin upward, its stalk tied, and bridges of skin left between the wounds so the anus does not narrow (Milligan 1937, through Pata 2021). It cures grade III and IV piles better than banding but is painful, can bleed heavily at about day 7 to 10, can narrow the anus if too much is taken, and can cause leakage. [VERIFY: timing] It needs a spinal or general anaesthetic, which places it at the district infirmary or above (THRIVING library, WO-11). The septic deaths include 10 after excision (McCloud 2006).

1.16 The thrombosed external pile

A sudden, hard, blue, exquisitely painful lump at the anal margin is a clot in an external vein. It is not dangerous. In a retrospective series of 231 patients, symptoms resolved in 24 days with conservative care against 3.9 days after excision of the clot and vein, and recurrence was 25.4% against 6.3% (Greenspon 2004). Excision helps most in the first two to three days, under a local infiltration (THRIVING library, WO-11). After about four days the pain is already easing

and the lump is left to settle. Incising and squeezing out the clot without removing the vein is common but recurs more often. [VERIFY] Grade B.

1.17 Anal fissure

A tear in the anal lining causes sharp pain on passing stool and a streak of bright blood. Fibre and sitz baths help early fissures. In the Cochrane review of medical treatment, glyceryl trinitrate ointment healed 48.9% against 35.5% with placebo, about half recurred later, and diltiazem and botulinum toxin worked as well as glyceryl trinitrate with fewer headaches (Nelson 2012). Topical calcium-channel blockers do better than oral ones (secondary summary [VERIFY]). No medical treatment approaches lateral internal sphincterotomy, a small cut in the internal sphincter muscle. Forceful anal stretching gave more persistent fissures and more minor incontinence than sphincterotomy (Nelson 2011). Anal stretching is grade X. Sphincterotomy belongs to the infirmary. A chronic fissure off the midline, or one that never heals, may be Crohn disease, tuberculosis or cancer (CH-09).

1.18 Rectal cancer called piles

A systematic review of 46 studies found that bleeding blamed on piles hides rectal cancer when there is no finger examination and no look inside. The warning signs were dark red blood or blood mixed in the stool, persistent pain, weight loss and a change in bowel habit (Tu 2026). The rule is simple: no one over about 40 with rectal bleeding is told "piles" until a gloved finger has felt the rectum. [VERIFY: age threshold] A hard, fixed, irregular mass or a narrowing is not a pile. The village cannot treat it. It can recognise it and tell the truth.

1.19 Varicose veins: elevation, compression, sclerotherapy and stripping

Varicose veins are swollen, twisting surface veins of the leg. Most cause aching. A minority lead to swelling, skin darkening and ulcers. Compression and the leg ulcer belong to CH-10, not yet written. Lying with the leg raised above the heart drains the vein, eases aching and is the first aid for bleeding.

Sclerotherapy. A Cochrane review of 28 trials with 4,278 participants found no trial against no treatment. Polidocanol foam against placebo reduced residual veins (relative risk 0.19) at the cost of more deep vein thrombosis, on very low certainty evidence (de Ávila Oliveira 2021). For spider veins, 20% saline with heparin worked and no agent beat another (Schwartz and Maxwell 2011). Hypertonic saline causes cramps and skin death if it leaks outside the vein, and injection into an artery causes necrosis of the limb (Kang 2022). Inference: the benefit is modest and mostly cosmetic, the harms serious, and strong saline is easy to come by, which makes it dangerous in untrained hands. It does not belong in the village. Grade A for short-term effect, X in untrained hands.

Stripping. Friedrich Trendelenburg tied the great saphenous vein at the groin around 1890 or 1891 (dates differ [VERIFY]). William Babcock in New York described pulling the vein out with an acorn-tipped probe, usually dated 1907 (Babcock 1907, not read). These operations belong to the infirmary, for recurrent ulcer or bleeding. ### 1.20 Superficial thrombophlebitis and the bleeding varix

Superficial thrombophlebitis is a hard, red, tender cord along a surface vein. A Cochrane review of 33 studies found fondaparinux reduced symptomatic clots spreading to the deep veins (relative risk 0.15, 3,002 people), but the other treatments were tested only in small poor trials (Di Nisio 2018). After the Fall it is treated with warmth, elevation, walking and pain relief. A cord that climbs to the groin or comes with a swollen calf needs the infirmary. [VERIFY]

The bleeding varix kills quietly. In Adelaide, eight deaths from ruptured varicose veins were found in 10,686 autopsies over ten years. They were aged 58 to 84 (mean 78), three quarters were women, and all were alone at home. Alcohol and anticoagulant drugs played a part (Byard and Gilbert 2007). A case from Milan describes death within 5 to 20 minutes, although lying down with the leg raised and pressing on the bleeding point would have saved her (Gentile 2021). This is the single most useful fact in the vein section. Every old person with thin-skinned varicose veins, and everyone living with them, must know it. Protocol 9.

1.21 Abscess, lipoma, sebaceous cyst and ganglion

Abscess drainage belongs to (THRIVING library, WO-14): drainage cures most abscesses without antibiotics, packing is no longer recommended, and the cavity is never closed (THRIVING library, WO-03).

The sebaceous (epidermoid) cyst is a skin-lined sac of cheesy keratin. A quiet cyst can be removed through a 2 to 3 mm cut by squeezing out the contents and pulling out the wall under local infiltration (Zuber 2002, search summary). Recurrence follows when wall is left behind, about 6 to 8% in reported series (secondary summary [VERIFY]). An inflamed cyst is drained like an abscess and its wall removed months later. Grade B.

A lipoma is a soft, rubbery, painless lump of fat. It may be left, or squeezed out through a small cut if small and on a limb. A lump that is hard, fixed, deep to muscle, larger than about 5 cm or growing fast may be a sarcoma and must not be cut in the village. [VERIFY: thresholds]

A ganglion is a jelly-filled swelling near a wrist or foot joint. In a British cohort followed about six years, 58% of untreated ganglia went away, recurrence was 58% after aspiration and 39% after excision, and no treatment beat leaving it alone (Dias 2007). Striking it with a heavy book is an old practice I could not source, and it can bruise or break the wrist. [VERIFY] Leaving it alone is grade B. ### 1.22 Ingrown toenail and phenol

The Cochrane review of 24 studies with 2,826 participants found surgery better than non-surgical treatment. Removing the side strip of the nail and destroying the root under it with phenol cut recurrence from 41% to 14% (relative risk 0.34, one trial of 117 people), and antibiotics after surgery did not help (Eekhof 2012). Liquefied phenol (about 88%) is applied to the nail root under a digital block for 1 to 3 minutes and then rinsed with alcohol. Series report recurrence of 1 to 3% (secondary summaries [VERIFY]). Do not use it in pregnancy (secondary summary [VERIFY]). Harms are burns of the surrounding skin, slow drainage for several weeks and, rarely, infection. The digital block uses plain lidocaine without adrenaline (THRIVING library, WO-11, Protocol 2). Grade A. This is a village dispensary operation once one person has been taught. Phenol must be salvaged. Protocol 10.

1.23 Hydrocele and pilonidal sinus

A hydrocele is fluid around the testis that glows red when a torch is held behind it, as a hernia does not. In children it is treated as a hernia. In adults, aspiration with sclerotherapy recurred far more often than surgery (relative risk 9.37) in a Cochrane review of four trials and 275 men (Shakiba 2014). Aspiration alone nearly always refills. [VERIFY] The danger is mistaking a hernia for a hydrocele and pushing a needle into the bowel. The Jaboulay operation, turning the sac inside out, is the infirmary repair, and I found no outcome series for it. [VERIFY] Where filariasis is endemic, large hydroceles are common. [VERIFY]

Pilonidal sinus is a hair-filled tract between the buttocks. The abscess is drained off the midline (WO-14). For the definitive operation, a Cochrane review of 26 trials with 2,530 people found that closed wounds heal faster but open wounds recur less (relative risk 0.60), and that closure off the midline heals faster with less infection and recurrence than closure in the midline (Al-Khamis 2010). Keeping the area free of hair helps prevent return. [VERIFY]

1.24 Circumcision and its complications

On its own terms first. Male circumcision is a religious obligation for Jews and Muslims and a rite of passage in many African, Pacific and other societies. Among the AmaXhosa of South Africa, ulwaluko is the initiation through which a boy becomes a man, conducted by a traditional surgeon (ingcibi) with a traditional nurse (ikhankatha) caring for initiates in seclusion. It is sacred and secret, and discussion with outsiders is forbidden. This report says only that it exists and that its content is restricted (Douglas 2018).

The record. In the June 2013 season in the Eastern Cape there were 12,169 legal and 2,314 illegal initiates, 359 hospital admissions, 24 penile amputations and 40 deaths, about 0.28% (Douglas 2018, my arithmetic [VERIFY]). Causes of death were sepsis, pneumonia, dehydration, assault, clots and gangrene. Published reports lay most blame

on illegal schools and untrained operators rather than on the custom itself. For children circumcised by medical providers, complications range from a median of 1.5% in newborns to 6% in older children, with severe complications clustering where operators were inexperienced and equipment poor (Weiss 2010).

Inference. Most of these deaths are from infection, gangrene and loss of fluid, which clean instruments (WO-12), enough water and a healer who knows the signs of gangrene can prevent. [VERIFY] [OWNER: whether the book's healers offer circumcision at all, and how they support communities whose own practitioners perform it.] ### 1.25 Who does what at which rung

Condition	Household	Village dispensary (300)	District infirmary (3,000)
Groin hernia, small and painless, in a man	Recognise, watch, avoid straining	Confirm, teach the signs, consider truss if fully reducible	Elective Lichtenstein repair by a trained hand
Femoral, female, infant or new hernia	Send on	Taxis only if stuck under 24 hours (WO-08)	Early repair
Strangulated hernia	Send on now	Taxis is forbidden, send on (WO-08)	Emergency operation
Piles grade I to II	Fibre, water, no straining	Examination, sitz bath	Banding
Piles grade III to IV	Same	Banding if trained	Excision
Thrombosed external pile	Rest, warmth, stool softening	Excision in first 72 hours	Same
Fissure	Fibre, sitz bath	Salvaged ointment if any	Sphincterotomy
Varicose veins	Elevation, bleeding first aid	Compression (CH-10)	Ligation for complications
Ingrown toenail	Soak, lift the corner	Partial avulsion with phenol	Same
Cyst, lipoma, ganglion	Leave alone	Drain inflamed cyst (WO-14)	Excision
Hydrocele, pilonidal sinus	Leave alone, drain abscess elsewhere	Drain abscess off midline	Definitive operation

2. Evidence grades

Remedy or procedure	Grade	Basis
Watchful waiting, small painless inguinal hernia in a man	A	Fitzgibbons 2006 and 2013, O'Dwyer 2006
Watchful waiting, femoral hernia	X	Gallegos 1991
Truss for a reducible hernia, symptom control	D	Fitting guides, no outcome data
Truss over a hernia that does not reduce	X	Teaching texts and case reports
Taxis within 24 hours, no strangulation signs	B	WO-08
Bassini or Shouldice tension repair	A	Amato 2012
Lichtenstein mesh repair	A	Lockhart 2018, HerniaSurge 2018
Sterilised mosquito-net mesh	A	Löfgren 2016, Ahmad 2019
Repair by trained non-physicians	A	Ashley 2021 and 2025

Remedy or procedure	Grade	Basis
Fibre for piles	A	Alonso-Coello 2006
Sitz bath	D	Gupta 2008 found no benefit
Witch hazel	D	No trial found
Horse chestnut standardised extract (veins)	A	Pittler and Ernst 2012
Horse chestnut raw seed by mouth	X	Toxic
Rubber-band ligation, grades I to III	A	Shanmugam 2005
Phenol-in-oil injection	B	Long clinical use, urinary harms
Milligan-Morgan excision	A	Shanmugam 2005
Early excision of thrombosed external pile	B	Greenspon 2004
Topical diltiazem or nitrate for fissure	A	Nelson 2012
Anal stretch	X	Nelson 2011
Lateral sphincterotomy	A	Nelson 2011
Elevation and pressure for bleeding varix	B	Forensic series
Sclerotherapy, trained hands	A	de Ávila Oliveira 2021
Partial nail avulsion with phenol	A	Eekhof 2012
Leaving a ganglion alone	B	Dias 2007
Hydrocele aspiration and sclerotherapy	A (inferior)	Shakiba 2014
Off-midline pilonidal closure	A	Al-Khamis 2010

3. Means ledger

Rung	Hernia	Piles and fissure	Veins	Small surgeries
Hands and knowledge alone	Recognise inguinal against femoral, know the strangulation signs, gentle taxis (WO-08)	Finger examination, cancer warning signs	Lie down, leg up, press on a bleed	Leave cysts, lipomas and ganglia alone
Hearth	Cloth truss pad for a reducible hernia	Fibre, water, sitz bath	Cloth pad and bandage for a bleed	Warm soaks for toenail and abscess
Garden and still	Pressure cooker for instruments (WO-12)	Astringent washes (grade D)	Nothing proven to add	Alcohol for skin preparation
Village dispensary	Teaching, triage, taxis, truss fitting	Banding if trained and equipped, excision of fresh thrombosed pile	Compression (CH-10)	Toenail with phenol, drain abscess and inflamed cyst

Rung	Hernia	Piles and fissure	Veins	Small surgeries
District infirmary	Elective Lichtenstein repair with sterilised net, emergency operation	Excision of grade III to IV, sphincterotomy	Ligation for bleeding or ulcer	Excision of cysts, hydrocele and pilonidal operations, infant herniotomy
Hospital before the Fall	Repair within hours of strangulation, laparoscopy, bowel resection with blood	Banding, stapling, endoscopy for cancer	Ultrasound, foam, laser, stripping	All the above with antibiotics and pathology

What each rung changes. The household changes the outcome by knowing which lumps to fear and by acting on a bleeding varix in seconds. The dispensary changes it by banding piles, freeing toenails and spotting the strangulated hernia early. The infirmary changes it by turning a 4 to 5.5% emergency mortality into a 0.2 to 0.5% elective one. Each repair done electively removes one future emergency.

4. Harm test

- Hernia repair kills by sepsis, bleeding, bladder or bowel injury and anaesthetic overdose (WO-11). It maims by chronic pain (10 to 12%), damage to the testis's blood supply and recurrence. Badly sterilised mesh infects and must usually come out. Fever, a hot swollen groin or pus after day three means infection. Do not operate electively on a man with a chest infection or who cannot empty his bladder. [VERIFY]
- A truss hides strangulation and must never go over a hernia that is not fully back. Taxis after 24 hours or with strangulation signs pushes dead gut back in (WO-08).
- Mosquito net: never insecticide-treated, never only boiled, never melted or distorted. [VERIFY]
- Banding: a band below the dentate line causes instant severe pain and must come off. Rare pelvic sepsis kills (10 of 38 reported cases). Never band a patient on anticoagulant or antiplatelet drugs or with a bleeding disorder. Bleeding can follow when the pile falls off after about a week. [VERIFY]
- Phenol injection too deep in front causes prostatic abscess, urinary harm and impotence. Never in nut allergy, children or pregnancy. [VERIFY: pregnancy]
- Phenol on the toe burns skin it touches. Avoid in pregnancy, poor circulation or diabetic feet. [VERIFY: last two]
- Raw horse chestnut seed poisons, and children mistake it for sweet chestnut.
- Sclerosants cause skin necrosis, deep clots and, if injected into an artery, loss of the limb.
- Lidocaine beyond the WO-11 ceiling causes tingling lips, ringing ears, twitching, fits and cardiac arrest. Adrenaline never goes into a finger or toe.
- Hydrocele aspiration can puncture bowel in a hernia. Shine a light through and feel above the swelling first.
- Circumcision kills by bleeding, infection, gangrene and dehydration, most often in untrained hands.
- Misidentification: rectal cancer called piles, sarcoma called lipoma, femoral hernia called a gland, testicular torsion called hydrocele or hernia. ## 5. Red flags

1. A hernia that is stuck, tender, red or hot, with vomiting or a swollen belly, means strangulation. Without an operation within hours the patient may die. Follow WO-08. If no one can operate, give pain relief, keep the patient lying, give fluids by mouth while not vomiting, and say plainly that he may die. Honest comfort includes keeping him warm and not alone.
2. Fever, increasing anal pain or difficulty passing urine in the week after banding or injection is pelvic sepsis. Antibiotics and transfer the same day.

3. Rectal bleeding with weight loss, dark blood mixed in the stool, a change in bowel habit or a hard mass is probably cancer.
4. A varicose vein spurting blood: lie the person down, raise the leg, press. Death comes within minutes otherwise.
5. A swollen, painful calf or a cord climbing to the groin means a deep clot. The infirmary.
6. A painful, swollen testis in a boy or young man is torsion until proved otherwise, with only hours to save the testis.
7. A lump that is hard, fixed, deep or growing fast is not a lipoma.
8. A black, cold or foul-smelling penis or toe after surgery is gangrene.

6. The case against

Against lay surgery. HerniaSurge itself requires 300 supervised repairs before a Shouldice surgeon works alone, and the Sierra Leone associate clinicians had three years of training and a hospital behind them (HerniaSurge Group 2018, Ashley 2021). Löfgren and colleagues warn against generalising their mesh trial to settings without their safety procedures (Löfgren 2016). CapaCare figures in WO-08 show a laparotomy mortality of 4.3 to 8.0% among trained non-physicians in Sierra Leone. The primary-surgery literature reports from functioning hospitals and may understate the deaths that occur without antibiotics and blood. [VERIFY]

Against the hospital. The romance of the hospital is wrong too. Most hernias never strangulate (Fitzgibbons 2006). Chronic pain after repair is common (HerniaSurge Group 2018). Most ganglia go away on their own (Dias 2007). Rubber-band ligation, a clinic procedure invented in 1963, replaced much operating. The modern lesson is restraint.

Against the herbal. Witch hazel has no trial. Raw horse chestnut poisons, and the effective extract is industrial. Old carbolic injection killed 9 of 3,000 patients in 1879 (Pata 2021).

Against the trials themselves. They included few women, no infants and almost no emergencies. Follow-up was one to five years, while recurrence and mesh complications continue for decades. [VERIFY]

7. 10-line summary

1. About a quarter of men will have a groin hernia.
2. A small painless inguinal hernia in a man can be watched. Incarceration is about 2 per 1,000 patient-years.
3. Femoral, female, infant and new hernias must not be watched.
4. Emergency repair kills 10 to 20 times as often as elective repair.
5. Sterilised plain mosquito net equals commercial mesh in trained hands.
6. Trained non-physicians repair hernias as well as doctors.
7. Fibre treats most piles. Banding is the first procedure for grades I to III.
8. Fever, pain or urinary retention after banding is lethal sepsis until proved otherwise.
9. A bleeding varicose vein kills in minutes and is stopped by lying down, leg up, pressure.
10. Rectal bleeding after 40 is not piles until a finger has examined the rectum.

8. Open questions

- Does a truss change the strangulation rate? I found no trial.
- What is the recurrence and infection rate of mesh repair sterilised in a pressure cooker rather than an autoclave? No study found.
- Which salvaged nets survive 121 °C, and how would a village test this without a laboratory?
- How many supervised repairs make a safe non-physician surgeon after the Fall?
- What is the long-term fate of mosquito mesh beyond five years?
- Can a forge make a usable banding ligator and proctoscope? [VERIFY]

- Outcomes of the Jaboulay hydrocele repair at low-resource sites.

9. Sources to read in full

1. HerniaSurge Group (2018), the groin hernia guideline, especially the low-resource chapter.
2. Löfgren and colleagues (2016) on low-cost mesh in Uganda.
3. Ashley and colleagues (2021) on associate clinicians in Sierra Leone.
4. Fitzgibbons and colleagues (2006) on watchful waiting.
5. Stephenson and Kingsnorth (2011) on sterilising mosquito net.
6. McCloud, Jameson and Scott (2006) on sepsis after haemorrhoid treatment.
7. Pata and colleagues (2021) on the history of haemorrhoid surgery.
8. Eekhof and colleagues (2012) on ingrown toenails.
9. King, Primary Surgery, volume 2, which I could not obtain.

At the bedside after the Fall

The household knows which lumps can wait and which cannot. It eats fibre, drinks water and does not strain. Everyone living with an old person with varicose veins knows how to stop a bleed: lie down, leg up, press. It needs only cloth. The first failure to expect is a stuck hernia hidden out of shame until the second day.

The village of 300 has one healer trained to examine a groin and an anus with a gloved finger, fit a truss, perform taxis within its limits, band piles if equipped, and treat an ingrown toenail with phenol under a digital block. It needs gloves, a proctoscope, a ligator and bands, salvaged phenol and lidocaine, a pressure cooker, and a register of every hernia with its type and date of onset. The first failure to expect is a femoral hernia in a woman called a gland.

The district of 3,000 has two people trained in Lichtenstein repair under local anaesthesia, supervised for their first repairs, with a sterile room, a pressure cooker or autoclave, plain netting tested at 121 °C, instruments and sutures (WO-03), and a record of every repair and its outcome. The first failure to expect is a mesh infection traced to a broken sterility chain. ## Protocols

Protocol 1. Watching a groin hernia

1. Examine standing and lying. Find the bulge relative to the groin crease. Above and pointing toward the scrotum is inguinal. Below the crease and to the side of the pubic bone is femoral.
2. Can it be pushed back completely while lying? If not, it is incarcerated. Go to Protocol 3.
3. Watch only if all are true: a man, inguinal, small, painless or nearly so, fully reducible, present more than three months.
4. Femoral, female, infant, or new in the last three months: send for repair within weeks.
5. Teach the patient and family the signs of strangulation: stuck, tender, red, vomiting, belly swelling. Any one of them means go now, day or night.
6. Review every six months and record size and symptoms in the register.

Protocol 2. Fitting a truss

1. Only for a fully reducible hernia in an adult.
2. Fit lying down after the hernia has been pushed back.
3. Measure around the body between the top of the hip bones and the pubic bone.
4. Place the pad over the opening of the canal, not over the scrotum.
5. Ask the patient to stand and cough. If the hernia comes out under the pad, the fit is wrong.
6. Put it on in bed before rising, take it off at night. Check the skin daily.
7. Any pain under the pad, or a hernia that will not go back: remove the truss and treat as Protocol 3.

8. Replace the pad and belt every year or sooner if worn.

Protocol 3. The stuck hernia

Follow (THRIVING library, WO-08), Protocol 5. Taxis only within 24 hours, only without signs of strangulation, 5 to 15 minutes of gentle steady pressure, never force. Then repair within days.

Protocol 4. Preparing and sterilising mosquito-net mesh

1. Use only plain, untreated polyethylene or polyester netting, never one marked as treated with insecticide. Prefer new netting from a sealed pack. [VERIFY]
2. Test each new roll: sterilise one piece as below and inspect it. If it has shrunk, curled, fused or become brittle, reject the roll.
3. Wash the netting in clean water with mild soap, rubbing gently. Rinse in three changes of boiled water until no soap remains.
4. Dry flat in a clean, covered place.
5. Cut into pieces of 10 by 15 cm with clean scissors. Trim the edges straight.
6. Wrap each piece separately in clean paper or a double layer of cloth. Label with the date and roll number.
7. Sterilise in a stovetop pressure cooker at 15 psi (121 °C) for 30 minutes wrapped, counting from full pressure, following (THRIVING library, WO-12) Protocol 3. Never use an electric multicooker. Do not exceed 121 °C.
8. Let pressure fall naturally. Dry the packs in the closed cooker or a clean oven at low heat.
9. Store dry and closed. A pack that is wet, torn or dropped is not sterile. Resterilise once only, then discard. [VERIFY]
10. Record every pack used against the patient's name so that infections can be traced to a batch.

Protocol 5. Piles, first rung

1. Examine with a gloved, lubricated finger in every adult over 40 with bleeding, and in anyone with the warning signs of section 1.18.
2. Fibre: vegetables, pulses and whole grains daily, with 2 litres of water.
3. Do not strain or sit on the toilet for longer than needed.
4. Warm sitz bath for 10 to 15 minutes two or three times a day for comfort.
5. Review after six weeks. Persisting bleeding or prolapse: banding (Protocol 6).

Protocol 6. Rubber-band ligation

1. Check: no anticoagulant or antiplatelet drug, no bleeding disorder, no immune weakness, not pregnant. [VERIFY: pregnancy]
2. Explain the three danger signs: fever, increasing pain, difficulty passing urine. Any one means return the same day.
3. Patient on the left side with knees drawn up. Gloved finger examination first.
4. Insert the lubricated proctoscope. Identify the pile and the dentate line.
5. Grasp the pile at least 1 cm above the dentate line. Ask whether it hurts. If it does, move higher.
6. Draw the pile into the ligator and release the band at its base.
7. Band no more than one or two piles at a session. [VERIFY]
8. Severe pain immediately after banding: the band is too low. Remove it at once.
9. Paracetamol for pain. Fibre and water. Expect a dull ache for one or two days and slight bleeding when the pile falls off after about a week.
10. Repeat after four to six weeks if needed. [VERIFY]

Protocol 7. The thrombosed external pile

1. Within 72 hours of onset with severe pain: under local infiltration (WO-11 Protocol 4), excise the clot with its overlying skin as a small ellipse. Leave the wound open. Press for 10 minutes.
2. After 72 hours, or if no one is trained: sitz baths, stool softening with fibre and water, paracetamol. It will settle over two to four weeks.

Protocol 8. Anal fissure

1. Fibre, water and warm sitz baths for six weeks.
2. Salvaged diltiazem or glyceryl trinitrate ointment if available, applied to the anal margin twice daily for six to eight weeks.
3. Never stretch the anus.
4. A fissure that does not heal, or lies off the midline: refer for sphincterotomy and to exclude other disease.

Protocol 9. The bleeding varicose vein

1. Lie the person flat at once.
2. Raise the leg above the level of the heart.
3. Press firmly on the bleeding point with a clean pad and a flat finger for 10 minutes by the clock.
4. Bandage the pad in place firmly but not as a tourniquet.
5. Keep the leg raised for 24 hours. Then refer to the infirmary for ligation, and to CH-10 for compression.
6. Teach the household. Old people who live alone with varicose veins should keep a pad within reach of the bed.

Protocol 10. Ingrown toenail with phenol

1. Check there is no poor circulation, diabetes or pregnancy. [VERIFY]
2. Digital block with plain lidocaine (WO-11 Protocol 2). No adrenaline.
3. Apply a tight rubber band around the base of the toe for no more than 15 minutes.
4. Cut the outer strip of nail, about 3 mm wide, straight back to the root, and pull it out.
5. Protect the skin around with petroleum jelly.
6. Apply liquefied phenol on a cotton bud to the root bed for 1 to 3 minutes in total, renewing the bud every 30 seconds. [VERIFY]
7. Rinse with alcohol. Remove the tourniquet. Dress with a light bandage.
8. Expect drainage for two to four weeks. Daily salt-water soaks.

Numbers to carry

- About 1 man in 4 will get a groin hernia.
- A femoral hernia strangulates in 1 in 5 within three months.
- Elective hernia repair kills 0.2 to 0.5%, emergency repair 4 to 5.5%.
- Taxis only within 24 hours, never with strangulation signs.
- Mesh: plain net, 10 by 15 cm, 121 °C for 30 minutes wrapped.
- Lidocaine ceiling: lesser of 3 mg/kg and 200 mg plain (20 ml of 1%).
- Band 1 cm above the dentate line, and fever, pain or urine trouble after banding is sepsis.
- Phenol in oil: no more than 10 ml per session.
- A bleeding varix kills in 5 to 20 minutes: lie down, leg up, press.
- Over 40 with rectal bleeding: a finger examination first.

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