Lymphogranuloma Venereum: LGV

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5.1 Synonyms

Inguinal lymphogranuloma, Nicolas-Favre-Durand disease, climatic bubo, the fourth disease, benign suppurative periadenitis.

5.2 Concept

Sexually transmitted disease characterized by the presence of large inguinal buboes at an advanced stage.

5.3 Incubation Period

One to two weeks.

5.4 Etiological Agent

Chlamydia trachomatis, serovars L1, L2 and L3.

5.5 Clinical Manifestations (Figs. 5.1–5.12)

The main symptom is inflamed and painful inguinal adenitis (buboes). These may be due to advanced-stage genitoinguinal or chronic genitorectal lesions.

The advanced stage may develop into multifocal fistulation, which is recognized as a "watering can" type suppuration. During this phase, a feeling of general unwellness similar that associated with a cold may occur.

The chronic phase may affect the pararectal lymph nodes, causing anal stenosis. The genital region may develop elephantiasis, fistulas and ulcers. On the vulva this is called esthiomene.

At the beginning of the outbreak, the patient often has a feeling of general unwellness, fever and loss of appetite, which can lead to weight loss.

5.6 Laboratory Diagnosis

Laboratory diagnosis to confirm LGV is still substandard in developing countries, demanding of health professionals a mixture of intuition and clinical acumen. Laboratory diagnosis can be carried out via: cytology through Giemsa or Papanicolaou staining with observation of inclusion bodies (Figs. 5.18, 5.19), detection of *C. trachomatis* by culture in cell media, serological screening (complement fixation test, immunofluorescence, microimmunofluorescence and dose of anti-*Chlamydia* IgA—anti-MOMP IgA), (molecular biology (PCR) of samples swabbed from lesions or buboes. Serological screening, complement fixation test) is important if titers are equal to or lower than 1:64.

Evaluation of Laboratory Methods (Lewis, DA—modified)

Exam	Sensitivity %	Specificity %
Giemsa	45	95
Papanicolaou	62	96
Elisa	70–80	>99
Immunofluorescence	80–92	>99
PCR	>95	>99
Serology	40–50	85

M.R.L. Passos (ed.), *Atlas of Sexually Transmitted Diseases*, https://doi.org/10.1007/978-3-319-57470-7_5

5.7 Treatment and Control

The therapeutic regimens recommended by the Centers for Disease Control and Prevention (CDC, 2010) and the UK National Guideline for the management of lymphogranuloma venereum (UK, 2013) are provided in the table below.

Antibiotic	Dose	Frequency	Duration	Route of administration
Doxicycline	100 mg	12/12 h	21 days	Oral
Doxicycline	200 mg	24/24 h	21 days	Oral
Erythromycin	500 mg	6/6 h	21 days	Oral
Azithromycin	1 g	1× week	3 weeks	Oral

Other therapeutic regimens using tetracycline, minocycline and moxifloxacin are described in the literature.

- Oral sulfametoxazol 800 mg + trimetoprim 160 mg, 12/12 h for 21 days.
- Oral tianfenicol 500 mg, 8/8 h for 21 days.

Laboratory control exams are not required if the recommended therapeutic regimen has been concluded.

5.8 Complications (Figs. 5.13–5.17)

The difficulty of initial diagnosis of LGV or inadequate therapeutic approach may lead to complications, which include proctitis, proctocolitis sometimes imitating Crohn's disease, fistulas, stenoses and disfiguring fibroses, vulval ulceration, stenotic proctitis and elephantiasis of the vulva (esthiomene), penis, scrotum or perineum.

5.9 Differential Diagnosis

Soft chancre, syphilis, ganglionic or vulval tuberculosis, cat scratch disease (benign lymphoreticulosis) and Hodgkin's disease should be considered at first. Lapromatous leprosy and paracoccidiodomycosis (blastomycosis) with large inguinal masses may also be included in differential diagnosis.

5.10 Observations

- Antibiotics do not have a dramatic effect on the duration of inguinal lymphadenopathy, and the sequelae associated with the chronic phase do not recede. Advanced symptoms are quickly eradicated.
- Adequate therapy is associated with a decline in antibody titers detected through serological screening.
- In pregnant women, azithromycin may be the best option and doxycycline is contraindicated.
- Consider puncturing and draining buboes with a large calibre needle. Incision and surgical draining are formally contraindicated as they hinder the healing process or develop into fistulas.
- In the past decade, an increase in the number of cases of LGV has been observed in Europe, mainly affecting men that have sex with men (MSM) that are HIV positive and through serovar L2b of *C. trachomatis*. However, in our experience cases of LGV are rare.

Fig. 5.1 Large and highly inflammatory inguinal mass that was painful and unilateral. These large adenitis are also known as buboes. In this rare case, the initial inoculation lesion can be observed in the balanopreputial groove. Observe the folding of the inguinal mass caused by it attaching to Poupart's ligament and forming a groove sign. In the close ups: *(a)* suppurating pores (with the appearance of a "watering can"); *(b)* attachment to Poupart's ligament; *(c)* inoculation lesion

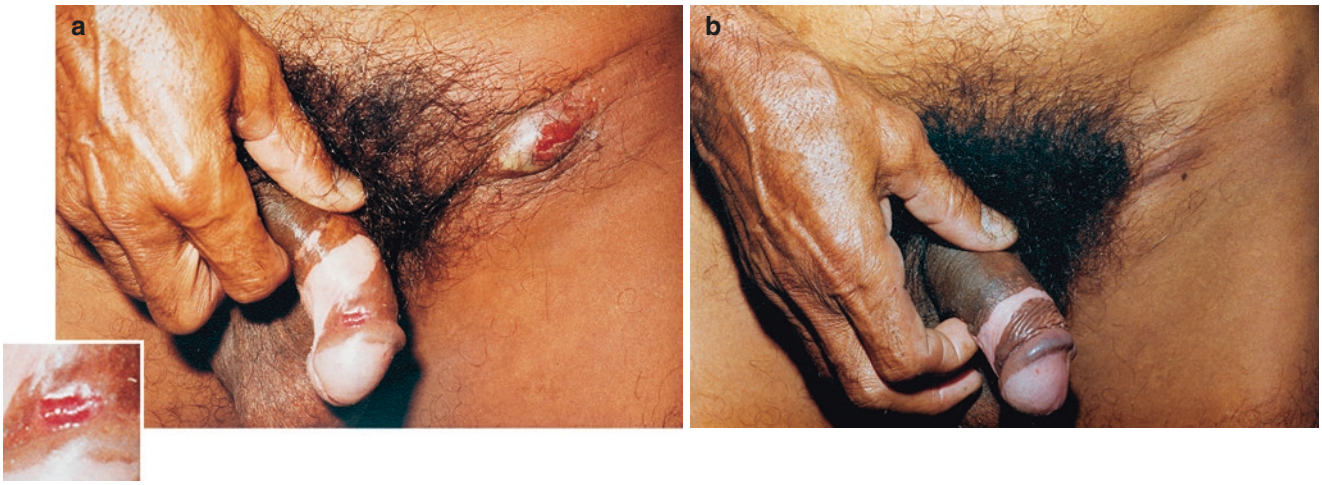

Fig. 5.2 (**a**) Very similar to the previous case. However, in this case the inguinal mass is smaller. The colorless area on the penis is vitiligo. In our experience, these cases of buboes together with the initial inoculation lesion (shown in the close up) are not common. We managed to examine the regular sexual partner (the patient reported having multiple sexual partners), who did not present any genital infection. (**b**) Development with complete clinical cure

Fig. 5.3 Typical case of buboes caused by inguinal lymphogranuloma in acute-stage LVG. Although we show various cases of LGV here, we do not consider this disease to be a serious risk to public health. Observe the groove sign on the inguinal mass

Fig. 5.4 Identical to the previous case. One of the sexual partners was also examined and presented just vulvovaginitis caused by *Candida* sp. In all of the patients which we diagnosed with LGV, we did not find cases of lymphogranuloma venereum in sexual partner. In addition, in our experience this infection is found more frequently in men

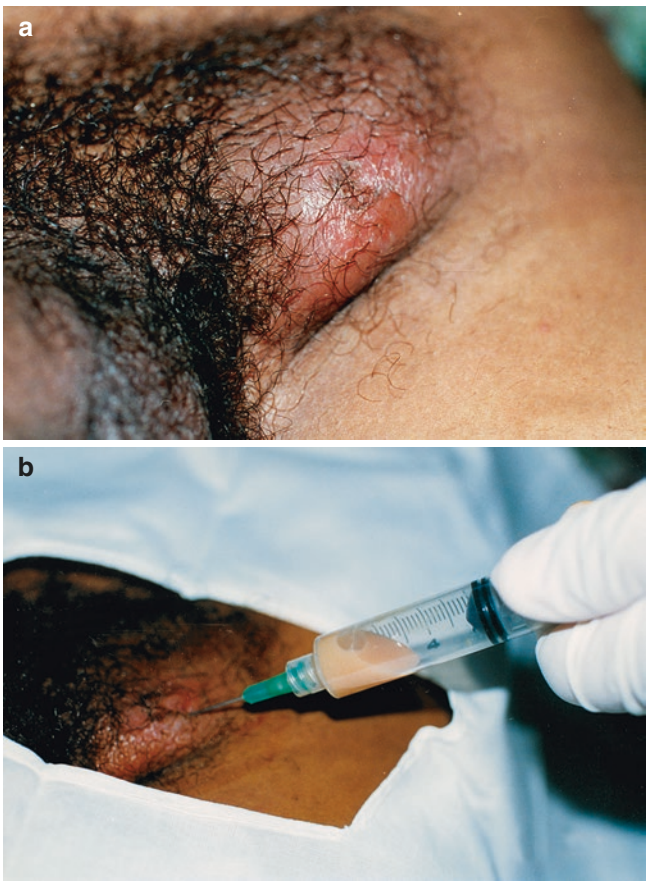

Fig. 5.5 (**a**, **b**) Cases of LGV often present a lot of pain in the regions of the inflamed adenopathy. This represents acute-stage genitoinguinal syndrome. In these situations, puncturing the lesion with a large calibre needle can provide the patient with some comfort. Reducing the volume of the inguinal mass reduces the pain. Testing of this material for *Chlamydia* may be positive. Cytology of this type of material is a simple procedure, although it is not always possible to observe the inclusion bodies that suggest infection by *Chlamydia*. However, if the material taken from the buboes is grown in ordinary media, mainly pyogenic bacteria will grow

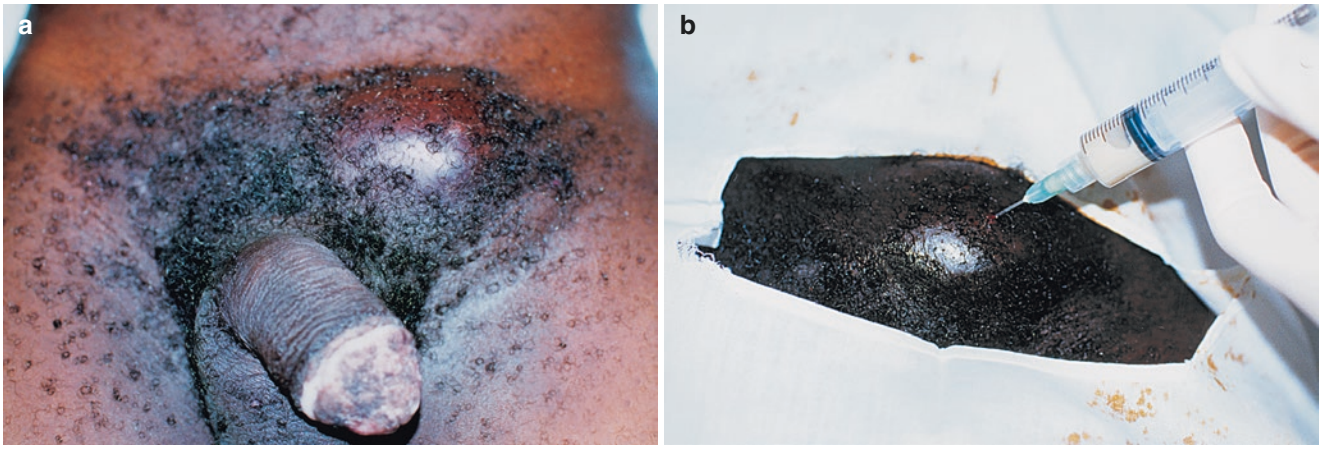

Fig. 5.6 (**a**, **b**) Same situation as described in the previous case. According to information provided by the patient, the sequel on his glans was from two previous episodes of soft chancre. To puncture the lesion, a small anesthetic button can be made using xylocaine and a fine needle (insulin needle) to reduce the pain of the insertion of the larger needle. However, some doctors prefer to insert the larger needle straight away as they believe that the local anesthetic does not significantly reduce the pain of the main procedure (removal of thick purulent material). Both practices are valid in our opinion, as long as they are carried out carefully and slowly and that the patient's wellbeing is always kept in mind. Abrupt or "heavy handed" movements that may be used when only teaching or scientific interest are considered should be completely avoided. This patient was diagnosed as HIV positive during a follow up appointment 1 year after he was treated for LGV

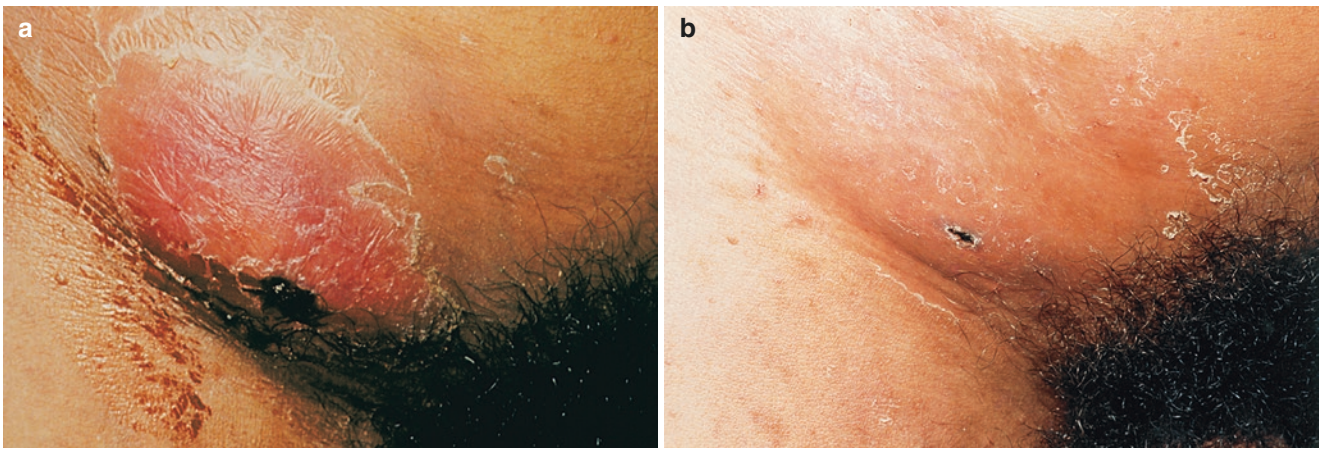

Fig. 5.7 (**a**) Patient presenting an extensive inflamed inguinal lymphadenomegaly with areas that are already suppurating. Some of the holes also have periorificial necrosis. Patients with acute-stage LGV associated with painful buboes, which have a detrimental effect on mobility, often complain of a feeling of general unwellness similar to that associated with a cold, a low to moderate fever (38 °C), headache and loss of appetite. Diagnosis is essentially clinical in the vast majority of cases, through clinical exclusion and therapeutic evaluation. This is because the tests that confirm LGV diagnosis are not carried out during consultation. When blood cell counts are taken they reveal slight leukocytosis and an elevated ESR (erythrocyte sedimentation rate). We usually recommend that patients remain absent from work for at least 3 days, mainly due to pain and difficulties in mobility. (**b**) During follow up, the patient's inguinal mass is clearly improving 1 week after antibiotics were administered

Fig. 5.8 Case of a 6-year-old child who was referred for incision and drainage of a large and painful inflamed inguinal mass at a general hospital. The child was initially diagnosed with a simple inguinal abscess requiring surgery. When we found out about the case we immediately suspended the procedure and started to investigate the possibility of sexual abuse. The mother informed us that an uncle who was very close to the family had presented very similar symptoms about a month previously. We decided to puncture the lesion with a large calibre needle to alleviate the pain of the bubo. We don't know the scientific explanation for this, but according to the testimony of our peers the healing of LGV buboes is very slow, and the improvement is rapid after administration of antibiotics together with anti-inflammatories/analgesics. Therefore, there is no justification for incision and drainage. Serological screening for chlamydia was highly positive. Many cases of suspected sexual abuse do not result in any conviction. This was one of those cases

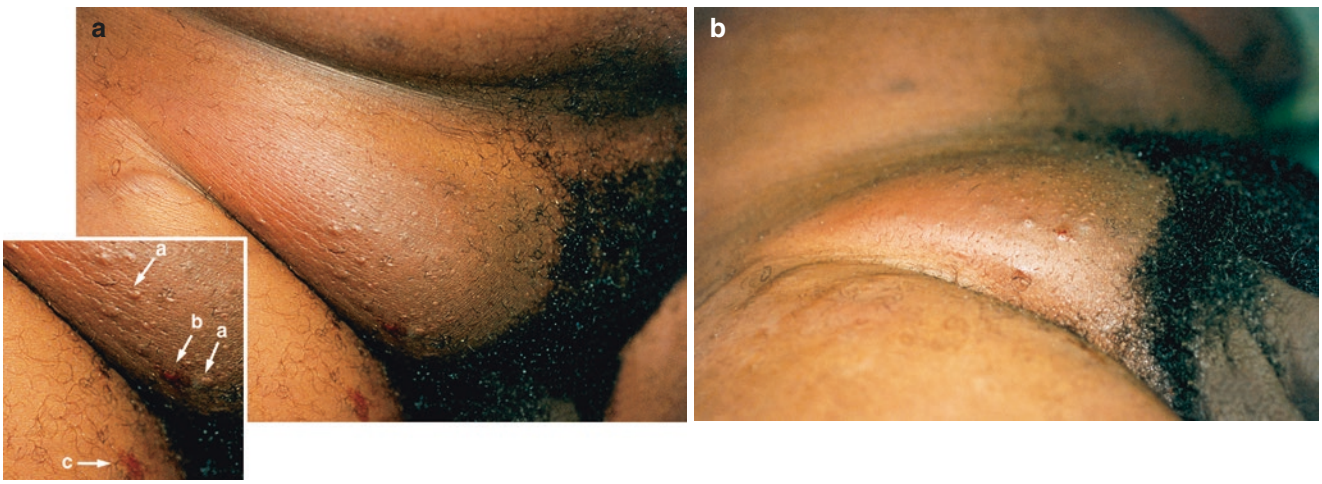

Fig. 5.9 (**a**) Patient with acute-stage LGV: genitoinguinal syndrome where the initial process that develops into fistulation into multiple orifices ("watering can" sign) can be observed. In this case in particular, complete fistulation did not take place as treatment was started. The classic treatment regimen includes tetracycline 500 mg 4× a day or doxycycline 100 mg 2× a day, always from 2 to 3 weeks. Currently, azithromycin can also be used, however not in a single dose. Remember that for this disease therapy must include 2–3 weeks of antibiotics. If oral azithromycin 1 g is used, this should be repeated twice with an interval of 1 week. In the close up: *(a)* pores that are almost starting to suppurate; *(b) a* pore that is already drained; *(c)* secretion coming out of a suppurating pore. (**b**) A different view of the same patient showing the prominent inguinal mass

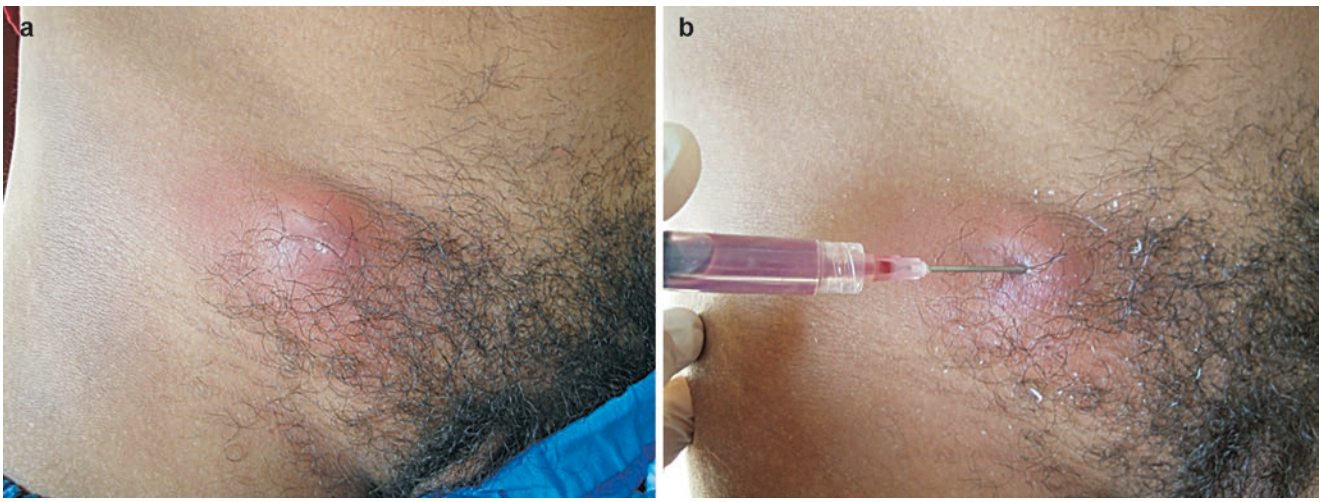

Fig. 5.10 (**a**, **b**) Adolescent of 19 years old presenting a tumor and heat and redness in the right inguinal region. He reported this appearing 2 weeks previously with a "wound" on his penis that disappeared shortly after, followed by discomfort in the groin area. He said that he sought treatment at a family health clinic in a rural area of Rio de Janeiro, where a nurse referred him to the STD clinic. First, we saw the patient outside of the health center. The following day at a medical center we emptied the bubo, requested exams and prescribed oral azithromycin 1 g once a week for 3 weeks and oral piroxicam 10 mg once a day for 5 days. Since the patient reported not having been immunized against hepatitis, we prescribed a course of hepatitis B vaccinations. Serological screening for syphilis, hepatitis B, hepatitis C and HIV was negative. Serological screening (ELISA) for chlamydia was positive. A drop of pus taken from the bubo was smeared on a glass slide for cytological analysis. The results reveled a cytopathic effect suggestive of inclusions caused by *Chlamydia*

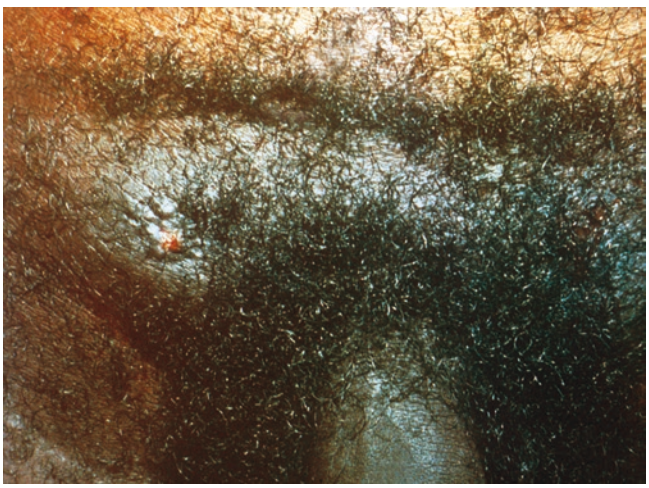

Fig. 5.11 Case of LGV in the healing phase with multiple fistulas in a patient whose treatment was started after fistulation occurred

Fig. 5.12 Although a classic observation in cases of LGV, "watering can" sign is extremely rare. Observe the multiple orifices with halos of inflamed hyperemia and suppuration. The "groove sign" can be seen in the middle of the bubo, meaning the lymph nodes underneath have attached to Poupart's ligament forming a groove

Fig. 5.13 Chronic-stage lymphogranuloma venereum with ulcerations in the scrotum and in the inguinal region. As well as ulcers, enlargement of the genitalia can also be observed. Differential diagnosis for soft chancre and donovanosis should be carried out in such cases

Fig. 5.14 Residual scarring from cured LGV in the right inguinal region. However, sequel with contractions caused by healing ulcers and fistulas cannot be removed very easily

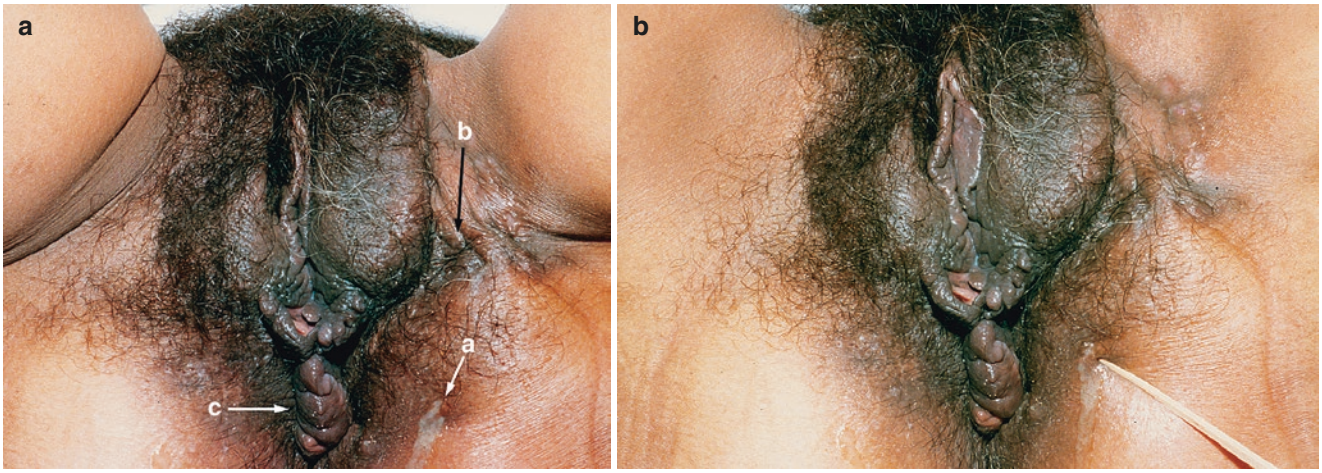

Fig. 5.15 (**a**) Case of rarely occurring esthiomene, including vulvar edema (elephantiasis) and fistulas with pus and contractions, characterizing chronic-stage genitorectal syndrome. During this stage, fistulation of lymph nodes infected from the internal iliac chains to the rectum can also be observed, developing scarring, contractions and stenosis of the rectum. This alteration presents clinically as "stringy stools" as a result of rectal constriction. Surgical correction of stenosis may be recommended, however this is generally not successful due to chronic constriction. In most cases LGV diagnosis is clinical, other diseases and through therapeutic evaluation. Diseases such as vulvar tuberculosis, paracoccidiodomycosis and Crohn's disease should not be forgotten as differential diagnosis. Serology for *Chlamydia trachomatis* may help, and if it cannot be done immediately, blood should be taken and the serum stored for future analysis as soon as possible. This should also be carried out for other materials, such as biopsy fragments (conserved in buffered formalin or kept in a dry, sealed flask in a freezer for future DNA analysis). (**a**) The *arrows* point out: (*a*) a fistula draining pus; (*b*) drained and healed fistulas with contractions; (*c*) rectal constriction with stenosis. (**b**) Observe the perineal fistula stretching to the vaginal furcula

Fig. 5.16 Genital elephantiasis in a male. This patient had a history of enlarged genitalia after an ulcerative STD contracted 15 years ago. He could not inform us exactly which STD he had or which medication he took. He reported that he had a painful and inflamed large mass in his groin. This was probably chronic-phase LGV with sequel

Fig. 5.17 Injury is uncommon to be observed even in MSM or women who practice anal sex, whose main manifestation is a hemorrhagic proctitis or proctocolitis with mucoid, bloody or mucopurulent secretion, with tenesmus, pain, anal pruritus, constipation or diarrhea

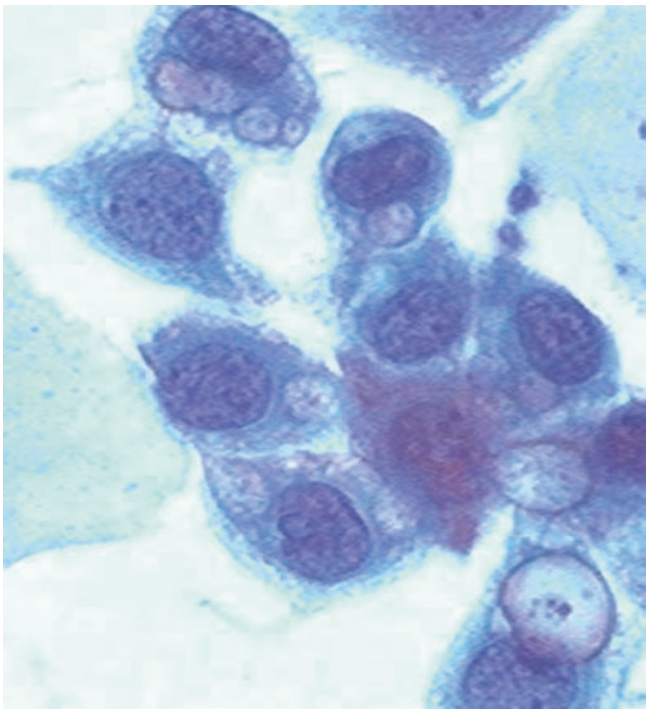

Fig. 5.18 Liquid-based cytology (SurePath®) suggestive of Chlamydia infection. Observe the cytoplasmatic inclusion bodies in vacuoles of thickened walls (1000×)

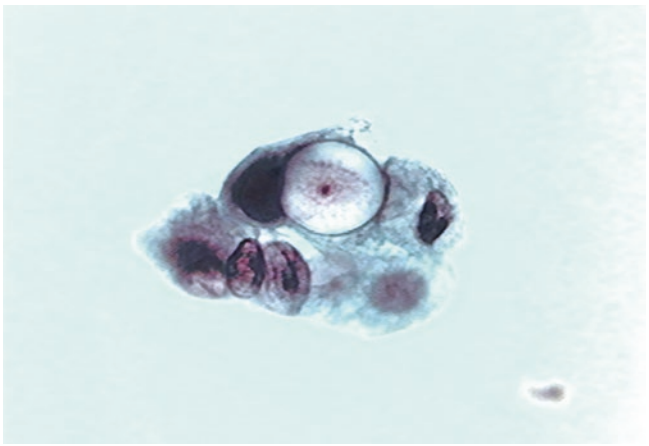

Fig. 5.19 Liquid-based cytology (SurePath®) suggestive of Chlamydia infection. The cytoplasmatic inclusion bodies are in vacuoles of thickened walls (1000×). The background is clean because of the technique that separates leucocytes