
An approach to women's health in the tropics

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The fundamentals of obstetrics and gynaecology are similar throughout the world. However, healthcare systems, cultures, resources, and prevalence of diseases do differ, particularly in the tropics. Individual clinicians will have varying degrees of experience in the discipline. This chapter draws attention to the cross-cultural factors that arise in tropical obstetrics and gynaecology. There is an introduction to the gynaecological history and examination for those who have had limited exposure to the specialty. A single chapter cannot cover the subject; however, there are many concise reference textbooks including those that provide simple guidelines¹⁻¹⁰. Similarly, there are both hardcopy and electronic therapeutic guidelines for treatment regimens¹¹. Here, attention is drawn to important practical differences in practice, together with an introduction to women's health in tropical public health.

17.1 Introduction to women's health in tropical medicine

Generalists intending to work in resource scarce areas of the tropics ideally will have experience in tropical medicine (e.g. a diploma in tropical medicine), anaesthetics, paediatrics, emergency medicine, and obstetrics and gynaecology. Doctors performing interventional obstetrics and gynaecology will have had appropriate training in the discipline. Such training of necessity is often in hospitals that provide the support of specialist colleagues, ancillary staff, and advanced technology. This infrastructure may not be present in much of the tropical world. Commonly, there is no subspecialisation outside larger metropolitan areas, and similarly there is much less support in remote hospitals and clinics. Transport is limited, as are available hospital beds in referral centres. The equivalent of medical 'culture shock' occurs on first experiencing rural and remote conditions; narrow support systems; older pharmaceuticals; unusual diseases; alien differential diagnoses; and, different clinical practices.

There may be infectious diseases which are unfamiliar to clinicians from temperate climates, and differential diagnoses need to reflect the country-specific disease prevalence. However, common medical disorders may present at an advanced stage and be confused with a 'tropical disease'. For example, Felty's syndrome, associated with rheumatoid disease and thrombocytopenia, may naturally be confused with malarial splenomegaly if clinicians have not previously seen the former disorder at an advanced stage of progression.

The tendency in the tropics to look for exotic diseases, rather than those disorders seen worldwide, is a common pitfall. However, it is also the case that endemic tropical diseases *do* need exclusion. For example, in the gynaecological acute abdomen cognisance is given to pelvic inflammatory disease, ectopic pregnancies, ovarian disorders, appendicitis, and degeneration of fibroids. However, it is equally important to be aware of tropical disorders such as the dog hookworm causing eosinophilic enteritis, typhoid, amoebiasis, or even

obstruction secondary to massive *Ascaris lumbricoides* infestations. Introductions to country specific diseases are available in textbooks and many online sites via the internet.¹²⁻¹⁶

Finally, but importantly, doctors working in tropical areas must familiarise themselves with the local cultures. This enhances their ability to meet the overall medical needs of the community with whom they are living and working. The following overview specifically addresses the significance of cultural circumstances, and draws attention to the interdependence of women's health and public medicine.

17.2 The relationship to public health

Obstetric and gynaecology are crucial components of clinical and public tropical health. A thorough medical history, examination, and management plan are central tenets of all clinical medicine. In women's health, more is required. Especially in the tropics, women are deliverers of public health in the community, and hence vital allies in prenatal care, neonatal and early childhood healthcare, dietary modification, breast-feeding, dental hygiene, vaccinations, family planning, and reducing the spread of STI's by educating partners and modifying behaviour.

In order to realise the help of women in tropical public health, clinicians need to be sensitive to cultural factors, sexual attitudes, and the increased awareness that women have about their physiology, contraception and family planning. It is essential to understand the existing cultural aspects of sexuality, which can vary between ethnic groups in the same country across a relatively small distance. The healthcare systems need to be supportive and informative. In women's health, benefits are far beyond the patient herself. Women are central to public health programs; and, if they are not involved such programs usually will fail.

It is axiomatic that patients reflect their cultural identities. Individuals and groups vary from affluent to poor and from secular to deeply spiritual. Clinicians must adjust to the environment, and learn the societal norms. They need to work with traditional healers, not in opposition to disparate traditional practices, be they mental or herbal. These are often different formats of social work or pastoral care. Religious ceremonies to evict evil spirits deemed to have caused a malady may be a necessary part of the cure in a given community. The importance of these factors transcends nationality, ethnicity, social class or educational background.

However, as with the side effects of pharmaceuticals, traditional medications may variously be emetics, purgatives, or short-lived psychotics. In so-called Western Medicine, clinicians seek to understand which herbal or complementary medications patients are taking that interact with prescribed pharmaceuticals. This is harder to do in some societies, where the traditional healers alone may know that information. Similarly, drugs such a kava may be regarded as traditional, but also have the potential to cause morbidity when used in association with herbal medicines¹⁷.

There can be a perceived compromise of best practice in cross-cultural societies. The culture may inhibit full gynaecological examination and history taking. Other women then provide invaluable assistance in their role as health managers. In regional centres, it can happen that neither a doctor nor midwife has seen a woman prior to active labour. A methodical approach still allows for good clinical outcomes, not only in effecting the delivery but also for starting

preventative and public health. Take the opportunity to perform health checks, provide supportive information, commence vaccinations, and involve the community or family. Pregnancy and postpartum care offer an invaluable time for a number of health initiatives. That is, Pap smears, screening for iron and nutritional deficiency, STD's, HIV, Hep B, Hep C, tuberculosis, enteric pathogens, and starting the health care partnership mentioned earlier. Pre and post-natal women and their newborn are likely to be in a healthcare environment where vaccination programs can begin. There should be no need today for the clinical management of neonatal tetanus, or having large measles epidemics with high mortality rates.

It is prudent to seek early expert counsel from local people regarding ethical issues, including informed consent. Each clinician should at least have a plan as to how she or he will deal with these. For example, a woman may request circumcision in the case of a newborn male, possibly at request of the husband or family. Some doctors feel obliged to refuse, because it is incorrect medically. Later, the same doctors may need to treat the baby or child because the circumcision proceeded in unhygienic conditions. Should the family lose confidence in the system, they possibly will not complete crucial vaccination programs. In other instances, grand multiparous women may request a post partum tubal ligation, or long-term contraception, without disclosing this to their husbands. Clinicians must know in advance what their response will be, and why.

Thus, in tropical women's health, cultural, ethical, and medical issues arise that may be very unfamiliar. Some of these problems initially can prove more intimidating than managing malaria, tuberculosis, or eclampsia, in pregnant women. There are established protocols for all of the latter. It is less easy to find written protocols regarding societal norms; however, books and papers are generally available for a specific culture.¹⁸⁻²⁰

17.3 General Principles of a Gynaecological History

17.3.1 Cultural issues

Provide especial sensitivity and privacy to all patients. It is impossible to generalise about sexuality, given the disparate spiritual issues surrounding the subject. In some areas of southern Africa, for example, the menses themselves lead to certain strict taboos in agricultural practices. If clinicians are unaware of local belief systems, they will not understand the actions and decisions of their patients. Many countries, including Australia, offer courses directed at those working and living with the indigenous people.²¹

It is also important to understand the benefits and limitations of interpreters. The interpreter is usually female, and mostly from the same culture as the female patient. They may change the content of a question if the enquiry is contrary to the family system concerned and the place of the interpreter in that system. This can be problematic when discussing sexuality, as the term 'family' is very broad. That is, there may be both spiritual and genetic ties that unite groups to form a large extended family. In extended families, societal issues can dictate that one member cannot ask certain questions of another, or be allowed alone in the same room with specific relatives. Matters of death, marriage, pregnancy, birth, femininity, and sexuality, are especially sensitive. If the interpreter is part of the local family system, they may need to change the format of a question. Alternatively, interpreters themselves may seek to modify the woman's reply into a meaning he or she deems more sensible.

Anywhere in the world, there is a need to avoid judgemental attitudes concerning masculinity

or femininity, and paternal or maternal family systems. In women's health, especially, clinicians must aim to support good health outcomes within the cultural norms of the community.

17.3.2 Gynaecological History

Each practitioner has their own approach to history-taking in gynaecology. The following sequence of enquiries is representative, together with certain caveats.

17.3.2.1 The presenting complaint in tropical gynaecology

Confirm the patient's age, parity, and occupation. If sufficiently confident, ascertain her role or position in family and social life. Try to establish a rapport early in the consultation, and work methodically through the history, working from the general to the most sensitive aspects last.

In establishing the history of a complaint, a problem list can be constructed which outlines the major complaint, associated events and their dates, prior treatment for the condition, and whether she has some particular thoughts as to what the problem may be. It is important to allow adequate time for the patient to outline the symptoms, concerns, and beliefs. As mentioned, be especially watchful if a translator is involved. Interruptions should be minimal, and if a patient speaks at some length yet the final interpretation is cryptic, one needs to repeat the history taking.

17.3.2.2 Personal, social, and occupational history

Ascertain the number of dependants in the family; social activities; number of people living in the home; traditional medications; alcohol; whom she regards as her closest relative; smoking history; and, past and current occupations.

17.3.2.3 Past Medical History:

Take adequate time to list the past medical and surgical history. Complete the list, repeat it and ask the patient to add to it if possible.

17.3.2.4 Functional enquiry

Take a standard functional enquiry, and avoid the tendency to look only for exotic tropical diseases. For example, iron deficiency anaemia, hypothyroidism, nephritis, diabetes, hypertension, chronic obstructive airways disease, rheumatic heart disease, and hyperemesis, are likely to be more common than malaria, schistosomiasis, or leishmaniasis, even if the latter are endemic. Epilepsy, for example, may be the presenting symptom of cysticercosis from *Taenia solium* in parts of sub-Saharan Africa and Western Papua. In many such patients, X-Rays of the thighs for calcific nodules then substitutes for a CAT scan should this not be available. An adequate but thorough functional enquiry takes remarkably little time.

17.3.2.5 Mental state of mind

This is often unasked, yet patients will reply as to whether they are happy, sad, feel generally unwell, tired, sleep well or poorly, or have lots of energy or no energy. The symptoms of

anxiety and depression are similar the world over, and a few simple questions will elicit these. It is prudent to watch the interactions between those present with respect to inhibitions in answering certain direct questions. Refugee health is a topic in its own right.

17.3.2.6 Menstrual history

Detail the LMP (first day of the last menstrual period); menarche and / or menopause as appropriate; the regularity, length and duration of the cycle; menstrual pain and loss; other menstrual symptoms; intermenstrual bleeding; details of any vaginal discharge with respect to amount, irritation, colour, duration, prior episodes; and, whether she feels the menses have changed or are abnormal.

17.3.2.7 Sexual history

The patient needs to feel confident by this stage of the consultation and it is usually evident whether or not that is the case. Ask about contraception; fertility or periods of infertility; frequency of intercourse; dyspareunia; libido; and whether she has any concerns about her partner or husband. Assess the patient's understanding of and risk factors for STD's, including HIV. Education may form an integral part of the management plan.

17.3.2.8 Preliminary differential diagnosis

This should be in place before performing the gynaecological examination. Commit this to paper or keep it in mind before the physical examination.

17.4 The Gynaecological Examination

17.4.1 Introduction

A gynaecological or obstetric examination in the tropics needs to pay particular attention to the general medical examination. This is not because of tropical diseases *per se*. Paucity of health services, or poverty, in tropical and temperate regions, inevitably leads to a higher prevalence of medical disorders. Parasitic and infectious diseases, however, are more common in the tropics^{22,23}; the functional enquiry and medical examination should be conducted accordingly.

If indicated, observe the patient for stigmata of rarer diseases, such as filariasis, leprosy or rickets, and common disorders such as anaemia, hypothyroidism or goitre. Pay particular attention to the skin, lymph nodes, cardiovascular system, respiratory system, and hepatosplenomegaly. Identify any herniae or inguinal lymph nodes at this stage. Urine analysis should be performed in all patients, together with microscopy of the urine and, if available, the stool. There is an opportunity to exclude diabetes, renal disease, or endemic parasitic diseases such as schistosomiasis. If malaria is present, arrange for blood smears as appropriate.

A methodical general medical examination also assists in moving to the gynaecological examination.

17.4.2 Breast examination

Perform a routine examination of the breasts, looking for lumps or other abnormal findings. This also provides a time for further education about self-examination.

17.4.3 Vaginal examination

Cover the patient with a sheet or gown, making her feel as private as possible. The examination should not be uncomfortable or painful. Empty the bladder prior to vaginal examination, unless the history suggested urinary incontinence. It is useful to have an examination table that permits the feet to be a metre apart, in order to prevent spasm of the abductor muscles, and to provide good vision under lighting.

Proceed in the usual manner to inspect the vulva and perineum. The labia are parted to inspect the urethral orifice and to view any signs of vaginal discharge, irritation, atrophy, or excoriation. The pinworm, *Enterobius vermicularis*, has prevalence rates greater than 10%, and can cause vaginitis in younger girls and pruritus ani in adults ²².

A speculum examination is usually performed at this stage, to avoid covering the cervix with lubrication gel. If that is the case, complete the speculum examination as outlined below, and then return to the vaginal examination.

Note if there is any obvious prolapse when the patient bears down. Palpate the size and consistency of each of the Bartholin's glands, using the fingers and thumb, before depressing the posterior vaginal wall and advancing one or two fingers to locate the cervix for a bimanual examination. Examine both the anterior and poster fornix, and then continue with the bimanual examination to assess the size and orientation of the uterus, remembering fibroids are common in tropical Africa, and may have grown to a considerable size before diagnosis. In this manner, determine the shape, size, position, consistency, and mobility of the uterus. Palpate the fornices for masses, or any thickening representing infection and fibrosis. By gentle examination, note whether any tenderness or cervical excitation is present. There is a higher rate of STI's and pelvic inflammatory disease in some regions of the tropics, particularly if husbands are migrant workers or visit prostitutes regularly.

In an orderly fashion, examine the posterior fornix, Pouch of Douglas, and the utero-sacral ligaments for masses, tenderness, or nodules. Assess for any descent or prolapse of the anterior or posterior vaginal walls, identifying any cystocele or rectocele. Finally, perform a rectal examination.

Explain the purpose of each facet of the examination, and the findings. This is particularly the case when no abnormal findings are present, so patients understand what the examiner was attempting to identify or exclude. If one does not provide this detail, women rightly may feel there was little point to the examination. Disenchantment by way of a lack of feedback is not restricted to tropical medicine.

17.4.4 Bivalve Speculum Examination:

Perform a routine Cusco's type speculum examination. Bear in mind this is an important part of both preventative and curative medicine. It provides an opportunity to visualise

abnormalities of the cervix, perform a Papanicolaou smear, identify areas of HPV on the cervix or elsewhere, and take swabs for STI's.

In order to visualise the cervix ensure the technique is correct. Choose a speculum of the correct size, fully closed, and at room temperature. Pass the speculum obliquely into the introitus, before bringing the handle anteriorly or posteriorly. Firmly depress the posterior vaginal wall, to overcome levator tension before the blades are advanced. Proceed forwards as far as the speculum will go comfortably. Open the blades under direct vision, and with good light, until the cervix comes into view. If there is difficulty in viewing the cervix because of its position, obesity, or folds of vaginal wall, ascertain the position and location of the cervix bimanually and repeat the examination. It may be necessary to change the size of the speculum, or to use swabs in sponge holding forceps to move the obscuring vaginal folds. Raising the hips of the patient will assist. The cervix must be viewed properly to obtain endocervical cells, the squamous-columnar junction being variable in position. Take swabs for infections routinely. Some laboratories may request urine in addition to the swabs for *Chlamydia* identification. Perform a Sims speculum examination, if indicated by prolapse, in the lateral position and provide a clear explanation as to the findings.

17.4.5 Conclusion

Much of the above is routine gynaecology. However, the importance of this discipline in tropical public health demands a methodical and meticulous approach.

17.5 An approach to Obstetrics

17.5.1 Introduction

In pregnancy, the goal is to achieve good prenatal care, vaginal delivery, and postpartum care. As indicated, a woman may present in established labour, with no prior contact with healthcare personnel. In areas where home or village deliveries are common, women may present far into labour, and in a maternal or foetal distressed state.

Obstetric fundamentals differ little in temperate or tropical regions. The main distinctive features are infectious diseases in pregnancy, and the often-found need for a broader clinical practice with less specialist support and limited technological back-up. However, it is axiomatic that it is not possible to provide an obstetric service without the concomitant capability to perform safe emergency caesarean sections and to provide adequate analgesia, preferably epidural, in failure to progress and related situations. Thus, most countries attempt to regionalise obstetric services. The availability of affordable travel, accommodation, and a horizontally integrated health system determines the success of such regionalisation programs.

Twins pregnancies and pre-eclampsia are more common in some regions of Africa, as are small-for-dates babies in many others. The frequency and advanced stage of severe pre-eclampsia and eclampsia seen in Southern Africa led to magnesium sulphate being used routinely in the management. In obstetric emergencies, ketamine is used frequently as an analgesic or anaesthetic. Its hallucinogenic side effects are less than the literature would suggest to those who are unfamiliar with its use.

Ultrasound reports may be unavailable, and patients do not always know the dates of their LMP. Hence, steroids or tocolytics need to be considered based on clinical assessment and liquor examination. In these situations it is necessary to employ the basics of good clinical examination, and utilise whatever technology is available. If there is an ultrasound machine, it is not difficult to acquire sufficient skills to measure biparietal diameters, femur length, other signs of fetal maturity, and to assess the amount of liquor 24. Local practices usually dictate whether to use X-Rays for pelvic measurements, or to look for age-related ossification points in the foetal skeleton. If the clinician is not a specialist, it is preferable to perform procedures that are routine to a particular hospital. Similarly, some physicians from tertiary facilities may be unfamiliar with performing a bubble test and other low-tech means of determining surfactant for foetal lung maturity, and they need to become familiar with these.

Some ethnic groups in the tropics have somewhat android shaped pelvic outlets but, in practice, vaginal delivery occurs at similar frequency. However, many statistical confounders surround prevailing vaginal and caesarean section rates.

Maternal carriers of HIV, Hepatitis B, Hepatitis C, and Treponema infections will reflect the community prevalence. Local clinicians will know the rates of infections that require exclusion, treatment, or prophylaxis in both the mother and the newborn. STD's may first present in labour, and cause difficulties. Clinical signs of vaginal herpes, for example, may necessitate an expeditious caesarean section, regardless of doubt, especially if laboratory diagnosis is difficult, and there is little chance of treatment for the newborn. In those tropical localities where women's health programs are not in place, labour may be the first occasion when unusual STD's are diagnosed. Similarly, ophthalmic or pulmonary infection in the newborn may be the first indication of gonorrhoea or Chlamydia infections.

For health care workers, in any locality, there is a need to observe protection against body fluids. Obstetric emergencies do lead to haste, which in turn may lead to needle stick injuries. The latter are a particular hazard when performing category 1 or 2 emergency caesarean sections, as defined by the Royal Colleges, where the life of the mother and baby are in jeopardy. Additionally, over a period of time, there will be occasion to repair high vaginal tears or extended episiotomies, which similarly can lead to needle stick injuries if there is not adequate care taken. Good analgesia, lighting, assistance with the retraction forceps for visualisation, and positioning, all militate against such events.

Assisting at operations also requires caution on the part of both the surgeon and assistant with regard to needle stick injuries occurring during emergency surgery.

17.5.2 Management of Labour

Employ an ABCED approach similar to that used in the Early Management of Severe Trauma (EMST), or Advanced Life Support courses. Clinicians will also find these courses useful if undertaken prior to working in the tropics as non supported generalists^{4,25}. Most obstetricians utilise such an approach, and it serves well to have these principles in mind.

17.5.2.1 Assessment

Each labour is in fact a trial of labour, and needs to be regarded as such. The desired outcome is a healthy baby and well mother, using a means of delivery appropriate to the situation and the progress of labour.

Initial assessment involves establishing baseline conditions for the mother and baby on admission to the labour ward. This involves a detailed obstetric history, general examination, and an obstetric examination.

Factors of risk are noted, and the baseline clinical observations and investigations then performed.

17.5.2.2 Baby

Establish the gestational age as accurately as possible, and the foetal maturity based on size, consistency of the skull, prior reports, and ultrasound. Only use X-Rays in difficult cases if that is the practice of the local facility.

The foetal lie, presentation, and its station form part of the initial examination, together with foetal heart rate during, after and between contractions. Check carefully for twins or triplets. Distinguish any leaking amniotic fluid from urine, if noted, by checking the pH. If the amniotic membranes are broken, and the fetus is mature, aim for delivery within twenty-four hours. A hind water leak can be difficult to diagnose, and the skills of the individual clinician come into play. Note the location of the placenta, preferably by ultrasound. When available, a baseline cardiotocograph constitutes part of these standard observations.

17.5.2.3 Condition of the mother

In the tropics, a general medical examination forms part of the obstetric examination. It is particularly important to exclude rheumatic heart disease, renal impairment, hypertension, and diabetes. A variety of infections and STD's, including HIV, Hepatitis B, Hepatitis C, herpes, *Treponema pallidum*, chancroid, LGV, *Chlamydia*, *Trichomonas vaginalis*, *Neisseria gonorrhoeae*, Group B streptococci, and tuberculosis may be common in the locality, and an understanding of sexually transmitted diseases is important^{11,26,27}. Thus, blood tests, swabs and sputum cultures are taken during the initial assessment. Some lesions may require biopsy.

Treatment of the baby can then commence shortly after delivery, when an umbilical catheter is inserted easily, should the clinician be inexperienced in obtaining venous access.

Assess the mother's mental state, her concerns, and note whether any anxiety is present. Provide immediate assurance, any necessary analgesia, and appropriate explanation. Lack of adequate analgesia is a frequent cause of incoordinate contractions, and failure to progress.

17.5.2.4 Determine a management plan

In practice, the management plan is foremost to determine whether labour, if present, can progress. Assess what interventions are needed immediately, and which others may be needed during the progress of labour.

Occasionally, it can be difficult to determine whether active labour is in place. This is of particular importance as it has much influence on the management plan. When using graphs to determine progress, incorrect starting points can lead to unnecessary caesarean sections or interventions. Progress to established labour may vary depending on a number of anatomical and physiological factors. Some women have distressingly painful contractions prior to

established labour. The management plan may then include analgesia, including epidural if severely distressed. Plotting and graphing cervical dilation begins only when the criteria for established labour have been met. Generally, labour is established when the cervix is 3 centimetres dilated, with contractions occurring every 3 minutes, and when the latter are increasing in frequency and duration.

A management plan is required for pre-labour, and this will be based on the assessment of the cervix's length, effacement and dilatation; the station of the presenting part; pelvic assessment; and, the state of the membranes. Augmentation is achieved by rupturing the membranes, and administering oxytocin or prostaglandins as appropriate. Sedation, tocolytics, or prostaglandin inhibiting agents suppress labour. Alcohol infusions should not be used, even if such practices still exist in some remote areas.

17.5.2.5 Examine the progress of labour

In labour, there are two patients, the fetus and the mother. Both need to be monitored. There is nothing specific to tropical obstetrics, except that closer hands-on clinical monitoring may be the norm. Then, basic skills come in to play with respect to manually auscultating the fetal heart and its variation with contractions; the rate of cervical dilatation; descent of presenting part; uterine dystonia; meconium, if present; hydration of the mother; and, providing appropriate analgesia. Vital signs in the mother include blood pressure, temperature, pulse rate, urine output, and urine analysis, and these must be recorded frequently. The mental state, degree of tiredness, and amount of pain experienced are assessed with equal care.

17.5.2.6 Management

It is not possible to deal here with all the contingencies that arise during the management of labour. Some general points apply to obstetric practice where there is limited support. Hydration and adequate analgesia are extremely important. Judicious augmentation of labour may be necessary if there is failure to progress. Standard management protocols apply. However, there should be immediate caesarean section if these interventions do not have the desired effect of improving the progress of labour and leading to the second stage of labour.

The caesarean section itself, and neonatal resuscitation, can be difficult if there is undue delay in proceeding to surgery. Therefore, the ability of the clinician to perform safe caesarean sections, or call for the assistance of a person who can do so, is vital. The situation of having to perform symphysiotomies, or dealing with an impacted malpresented head, should be avoided at all costs.

17.6 Conclusion

This is a brief discussion of tropical obstetrics and gynaecology. Cultural issues, infectious diseases, tropical diseases, and limited resources bear heavily on women's health in many tropical regions. The cultural issues must be understood to properly implement women's health programs. Scant resources often dictate that metropolitan clinicians must rediscover the art of history-taking, examination, and management where there is limited sub-specialist support or ancillary technology. Whilst such situations are initially disconcerting to newly arrived clinicians, a measured approach using established protocols leads to good clinical outcomes.

Most importantly, many aspects of tropical public health can be facilitated during the practice of obstetrics and gynaecology.

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