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We hope that making available the relevant information on Pachyonychia Congenita will be a means of furthering research to find effective therapies and a cure for PC.
Table 1. Composition of the different nitroglycerin preparations and results of patch testing

<table>
<thead>
<tr>
<th>Diatusor 10</th>
<th>Nitrederm 10</th>
<th>Discotine 5</th>
<th>Lentula spray</th>
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</thead>
<tbody>
<tr>
<td>Nitroglycerin</td>
<td>Nitroglycerin</td>
<td>Nitroglycerin</td>
<td>Nitroglycerin</td>
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<tr>
<td>Acrylic polymer</td>
<td>Silicone oil</td>
<td>Acrylic polymer</td>
<td>Hemisynthetic glycerides</td>
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<tr>
<td>Polyethylene</td>
<td>Polyethylene</td>
<td>Ethyl oleate</td>
<td>Migrol 829</td>
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<tr>
<td>Polyvinylidene</td>
<td>Ethylene vinyl</td>
<td>Glyceryl monolaurate</td>
<td>Ether</td>
</tr>
<tr>
<td>acetate copolymer</td>
<td>Polyethylene</td>
<td>Levomenthol</td>
<td>Levetiracetamethane</td>
</tr>
</tbody>
</table>

Not tested + at 96 h + at 96 h + at 96 h

References

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Avoiding Pachyonychia Congenita Using Oocyte Donation

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Key Words
Pachyonychia congenita • Autosomal dominant trait • In vitro fertilization • Oocyte donation

Pachyonychia congenita is a rare genetic disorder of the ectoderm [1-3]. It is an autosomal dominant disease, thereby conferring a 50% chance of transmission to the next generation. The most common subtype is the Jadassohn-Lewandowsky form which is characterized by leukoderma atrophicans. A second subtype is the Jackson-Lawler form in which patients do not have oral lesions but instead have multiple epidermal cysts, abnormal hair and nail abnormalities [4]. Recently, the subtypes were correlated with missense mutations in keratin 16 and keratin 17, respectively [4]. Importantly, different families can have distinct mutations that can help explain the variant expression of the syndrome between families. Within families the penetrance can also vary.

In vitro fertilization (IVF) was pioneered over 20 years ago [5] and has resulted in tens of thousands of births. Typical indications for IVF include blockage of the fallopian tubes, severe endometriosis, poor sperm motility and unexplained infertility. More recently women of advanced reproductive age and women with premature ovarian failure have achieved pregnancy with oocytes donated by younger women [6]. In 1995, over 3,000 cycles of oocyte donation were performed in the USA with a live birth rate per transfer of 35.5% [7]. A cumulative pregnancy rate of 90% can be achieved with 5 cycles.

The oocyte donor undergoes ovarian hyperstimulation with follicle-stimulating hormone which is monitored by transvaginal ultrasound and serum estradiol levels [8]. When the follicles reach 18-20 mm, human chorionic gonadotropin is given to trigger ovulation, and 36 h later the follicles are aspirated transvaginally under ultrasound guidance. The oocytes are then incubated with sperm. Fertilization is documented, and resulting embryos are transferred after 2 or 3 days to the recipient's uterus. The recipient has been carefully synchronized with the donor to ensure that the endometrium is appropriately primed for implantation. This is achieved with first estrogen and then progesterone supplementation. Nine to ten days following the embryo transfer the patient is monitored for pregnancy.

The patient is a 39-year-old gravida 0 born with pachyonychia congenita. She had multiple surgeries to correct deformities secondary to her condition from the age of 5 to 10 years. She has lost her fingernails and still suffers from painful blisters on her feet and from mouth soreness. She has no other significant past or present medical problems and is not on medications. Her family history is significant for pachyonychia congenita. The pedigree is shown in figure 1.

The patient's partner is a 41-year-old man without any significant medical or surgical history. He has no children but has a normal semen analysis.

The patient had been on oral contraceptives for 17 years with regular menses every 28 days. The couple avoided pregnancy due to their fear of an affected child with the mother carrying an autosomal dominant gene for a disfiguring and painful disease. After consultation with her gynecologist she was referred for oocyte donation. The couple passed all the routine precycle screens including physical exams, and psychiatric and lab evaluations. Shortly thereafter, the couple was offered an appropriate donor matched to her general phenotype. Their first IVF cycle resulted in a miscarriage. A second cycle with the same donor subsequently resulted in a single intrauterine pregnancy. A vaginal delivery at 39 weeks gestation after 3 h of labor resulted in a healthy liveborn female infant.

This is to our knowledge the first case of oocyte donation used in a patient affected by an autosomal dominant syndrome. Prior to undergoing oocyte donation the couple was counseled about other reproductive options that can prevent affected offspring. Preimplantation diagnosis is possible only if the affected gene is known (such as in pachyonychia congenita). The specific mutation affecting the family
is identified by screening family members. Once fertilization has occurred in vitro, one cell of the preimplanted embryo is biopsied and evaluated for the presence of the mutation. Polymerase chain reaction (PCR) is the preferred method for diagnosing single gene defects [9]. Half of the embryos would be predicted to be affected. If the mutation is not present, those embryos are chosen for embryo transfer. Furthermore, if the mutation is carried by the mother, the polar bodies of the oocyte can also be tested prior to fertilization [10]. Preimplantation diagnosis with PCR is quite laborious and expensive, and probably due to its complexity, errors in diagnosis have been reported. It would, however, allow the patient to be genetically related to her child. Another option if the specific mutation is known is to attempt IVF entirely, conceive naturally and have the fetus evaluated by either chorionic villus sampling or amniocentesis. Both of these procedures, however, carry an increased risk of losing the child, as well as possible rupture of membranes, premature delivery or even limb defects [11]. If the fetus carries the mutation, elective termination could be considered. Because of their concerns of error in preimplantation diagnosis and their discomfort with abortion, the couple declined these options. IVF obviates these last difficult choices.

References


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Alexandre Yersin (1863–1943) and the Centenary of the Plague in Nha Trang: A Threat Transformed

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Key Words
Plague · Yersin, Alexandre · Bioterrorism

Recent editorials in leading medical journals and newspapers address the threat of the criminal spread of pathogenic germs in urban centers [1–3]; 'bioterrorism' is the term applied to such endeavors. International discussions of such criminal acts rank Bacillus anthracis in the first place; Yersinia pestis must be considered yet another possibility.

This month of June marks a memorable centenary in regard to the elucidation of the pathogenesis of the onetime scourge of mankind: the plague. On June 2, 1898, Paul–Louis Simond (1858–1947), of France, discovered the transmission of the causative germ by fleas from rodent to man, in India. Three weeks later, on June 23, a small epidemic of plague broke out in Nha Trang, Vietnam, where Alexandre Yersin (1863–1943), the discoverer of the causative pathogen, lived; this was a challenge he immediately started to tackle. Four years earlier, in mid-June of 1894, both Yersin and Shibata Saburo (1852–1931) from Japan had worked in Hong Kong after an earlier outbreak of plague, and it was Yersin who first isolated the responsible germ and demonstrated it under the microscope [4, 5]. Eventually, after some controversies as to who of the two researchers really was first, it was named Yersinia pestis in Yersin's honor. Yersin was born in Morges near Lausanne in Switzerland and as an adult became a French citizen. He and Albert Calmette (1863–1933) were among the first to found Pasteur Institutes outside France, in Saigon, Ho Chi Minh City of today, in 1891 and Nha Trang, in 1895. Interrupted only by visits to Europe and a short stint as a teacher in Hanoi, Yersin lived and worked all his life in this small town up the Vietnamese coast about halfway between Saigon and Danang. He contributed in many ways to local development, by mapping parts of the country, founding a hill station in Dalat and bringing the rubber and quinine trees (Hevea brasiliensis and Cinchona succiruba) into Vietnam. He died there on March 1, 1943, and is buried close by in Suoi Giao (Suoi Dau) [6, 7]. The Dermatology