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Modern Surgery - Chapter 11. Erysipelas (St. Anthony's Fire)

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XI. ERYSIPELAS (ST. ANTHONY'S FIRE).

Erysipelas is an acute, contagious, spreading capillary lymphangitis due to the streptococci of erysipelas, which grow and multiply in the smaller lymph-channels of the skin and its subcutaneous cellular layers and also in the lymph-channels of serous and mucous membranes. *Cutaneous erysipelas* is characterized by a rapidly spreading dermatitis, by a remittent fever due to absorption of toxins, and by a tendency to recurrence. It is always preceded by a wound, a scratch, or an abrasion, which may have been trivial and may never have been noticed. The so-called idiopathic erysipelas is preceded by a breach of surface continuity so small as to escape notice. The initial point of infection may be in the mouth, the nostril, the pharynx, the auditory meatus, between the fingers or toes, at the margin of a nail, or in a cutaneous furrow. The involved area may or may not suppurate. Suppuration does not require a mixed infection, as the streptococcus is identical with the *streptococcus pyogenes*. Erysipelas is most common in the spring and fall, and is most usually met with among those who are crowded into dark, dirty, and ill-ventilated quarters; it attacks by preference the debilitated and broken-down (as alcoholics and sufferers from Bright's disease). The disease may become endemic in special places or localities. The poison of erysipelas will produce puerperal fever in a lying-in woman. The streptococcus was first obtained in pure cultures by Fehleisen. This organism is widely diffused. The question of identity with the streptococcus pyogenes is discussed on page 38.

Forms of Erysipelas.—Ambulant, erratic, migratory, or *wandering* erysipelas is a form which tends to spread widely over the body, leaving one part and going to another. *Bullous* erysipelas is attended by the formation of bullæ. In *diffused* erysipelas the borders of the inflammation gradually merge into healthy skin. *Erythematous* erysipelas involves the skin superficially. *Metastatic* erysipelas appears successively in various parts of the body. *Puerperal* erysipelas begins in the genitals of lying-in women, producing puerperal fever. *Erysipelas simplex* is the ordinary cutaneous form. *Erysipelas neonatorum* begins in the unhealed navel of a newborn child and spreads from this point. *Typhoid* erysipelas occurs with profound adynamia. *Universal* erysipelas involves the entire body. *Cellulitis* is often erysipelas of the subcutaneous layers. *Phlegmonous* erysipelas involves the skin and the cellular tissues, and causes suppuration, and often gangrene. *Edematous* erysipelas is a variety of phlegmonous erysipelas with enormous subcutaneous edema. *Lymphatic* erysipelas is characterized by rose-red lines due to lymphangitis. *Venous* erysipelas is marked by the dark color of venous congestion. *Mucous* erysipelas involves a mucous membrane. Erysipelas may attack the fauces, producing the very grave condition known as *faucial* erysipelas.

Clinical Forms.—The clinical forms are cutaneous erysipelas; cellulocutaneous or phlegmonous erysipelas; cellulitis, and mucous erysipelas.

Cutaneous erysipelas most frequently attacks the face. A fever suddenly appears, rises rapidly, reaches a considerable height, is remittent in type, and usually terminates in four or five days by crisis. At the time of

febrile onset spots of redness appear on the skin. These spots run together, and soon a large extent of surface is found to be red and a little elevated. Any wound, ulcer, or abrasion which exists becomes dry and unhealthy, and its edges redden and swell. The erysipelatous area of redness and swelling extends, its margin is usually sharply defined from the healthy skin, and the color fades at the original focus as the disease advances at the periphery of the red area. The color fades at once on pressure and returns at once when pressure is removed. There is slight burning pain, which is increased by pressure. In the hyperemic area vesicles or bullæ form, containing first serum and later it may be sero-pus, but there is rarely genuine suppuration in cutaneous erysipelas. Edema affects the subcutaneous tissues, producing great swelling in regions where there is much loose cellular tissue (as in the eyelids). The anatomically related lymphatic glands may become large and tender. In an ordinarily strong person the color is bright red or more rarely dark red. A dusky color precedes suppuration. A blue color precedes gangrene or indicates profound cardiac and pulmonary involvement. Erysipelas spreads now in one direction, now in another, influenced, according to Pfleger, by the furrows of the skin. When the disease ceases to spread, the swelling and redness gradually abate, and after they disappear desquamation takes place, and the blebs become dry and crusted.

In strong subjects the symptoms of cutaneous erysipelas are usually slight. In the old and debilitated the symptoms are typhoidal, delirium comes on, and death is usual. Possible complications are meningitis, pneumonia, septicemia, pleuritis, pyemia, endocarditis, arthritis, and albuminuria. Erysipelas neonatorum is generally fatal. In some instances an attack of erysipelas will cure an old skin eruption, a new growth, an ulcer, or an area of lupus. This is the *erysipele salutaire* of our French *confrères*.

Treatment.—Isolate the patient, asepticize the wound, if there be a wound, and administer a purge. Cases of cutaneous erysipelas occurring in a fairly healthy, young, or middle-aged subject, tend to get well without treatment. If a person is debilitated, free stimulation is necessary. Tincture of chlorid of iron is usually administered in doses of from 20 to 40 ♏ three times a day. Tonic doses of quinin are also given. Nutritious food is given at intervals of three or four hours. For sleeplessness or delirium use chloral or the bromids; for high temperature, cold sponging is required. To prevent spreading some have advised injection of the healthy skin near the blush with a 2 per cent. carbolic solution or with fluid containing gr. $\frac{1}{16}$ of corrosive sublimate. A band of iodin painted on the skin may arrest the progress of the disease, and so may a ring streaked around a limb or about an erysipelatous area by lunar caustic. Kraske has suggested a method of preventing the spread of cutaneous erysipelas which is often effective. The patient is anesthetized. At about two inches from the margin of the redness a series of cuts are made into the skin, to a sufficient depth to cause free oozing. Each cut is crossed by another cut and a ring of scarifications is made to surround the region of the erysipelas. After the oozing ceases the scarified area is soaked for one hour with a solution of carbolic acid (1 : 20) or corrosive sublimate (1 : 2000). The part is dressed with pads wet with carbolic acid (1 : 40) or corrosive sublimate (1 : 2000). This operation causes the formation of a protective barrier of leukocytes. Locally, paint the inflamed area

with equal parts of iodin and alcohol and apply lead-water and laudanum. The iodin is germicidal and quickly enters the lymph-spaces. The lead-water and laudanum allays the burning pain. If an extremity be involved, bandage it. Some advocate a daily inunction of Credé's soluble silver. A good application is a 50 per cent. ichthyol ointment with lanolin. A very useful method is von Nussbaum's. The author applies it somewhat modified, as follows: wash the part with ethereal soap, irrigate with a solution of corrosive sublimate (1 : 1000), dry with a sterile towel, apply an ointment of ichthyol and lanolin (50 per cent.), and dress with antiseptic gauze. Some use iced-water cloths. Hot fomentations are distinctly harmful. Some apply borated talc or salicylated starch. Ringer advised painting every three hours with a mixture composed of gr. xxx of tannic acid, gr. xxx of camphor, and ʒiv of ether. J. M. DaCosta recommends pilocarpin internally in the beginning of a case. Antistreptococcic serum has been used in erysipelas, and great results have been claimed for it. It is asserted that under its influence the temperature soon becomes normal. My personal experience with the serum treatment has not convinced me of its value, although some cases seem to be benefited.

Cellulocutaneous or **phlegmonous erysipelas** is characterized by high temperature (104°–106° F.), the rapid onset of grave prostration, irregular chills, sweats, and a strong tendency to delirium. The constitutional condition may be one of suppurative fever, sapremia, septicemia, or pyemia. The parts are red, as in cutaneous erysipelas, and the tumefaction is vastly greater. The swelling is brawny, comes on early, increases with exceeding rapidity, induces a high degree of tension, and frequently produces sloughing or even cutaneous gangrene. The lymphatic glands are swollen, but the inflamed lymphatic vessels are hidden by the tumefaction. In most cases suppuration occurs, and when this happens the parts become boggy and the pus is widely disseminated in the subcutaneous and intramuscular tissues, and even into muscular sheaths and tendon-sheaths (purulent infiltration). When the disease abates sloughs form, which leave ulcers upon being cast off. In bad cases muscles, vessels, tendons, and fascia may slough away. The commonest complications are suppression of urine, bronchopneumonia, congestion and edema of the lungs, meningitis, congestion of the kidneys, and acute pleurisy. Septicemia or pyemia may occur. We sometimes meet with this form of erysipelas after extravasation of urine. It is not a pure streptococcus infection. There is a mixed infection with other pyogenic cocci, and often with organisms of putrefaction.

Treatment.—At once asepticize and drain any existing wound, and dress such a wound with hot antiseptic fomentations. If there are inflamed lymph-vessels or glands above the area of cellulocutaneous infection, paint the skin above them with iodin and smear it with blue ointment or rub in Credé's ointment of soluble silver. Make numerous incisions into the inflamed tissues. These incisions should be near together, and each cut should be two or three inches long. Spray the wounds by means of hydrogen peroxid in an atomizer, wash with corrosive sublimate solution (1 : 1000), and pack each wound with iodoform gauze. Dress with many layers of gauze wet with a hot solution of corrosive sublimate and covered with a rubber dam, a hot-water bag being laid upon the dressing. If sloughs form, cut them away

and employ hot antiseptic fomentations. Change the dressings often. In some cases it may be necessary to employ continuous irrigation with warm antiseptic fluid, or continuous immersion in a hot aseptic or antiseptic bath. It is not unusually necessary to operate for the removal of enlarged lymphatic glands. In rare cases amputation is demanded. When granulations begin to form, treat as a healing wound. The constitutional treatment is that previously set forth as applicable to septicemia, viz., purgation, the use of diuretics and diaphoretics, the administration of strychnin, quinin, digitalis, alcoholic stimulants, and nourishing food. Antistreptococcic serum may be employed. In severe cases employ hypodermoclysis or saline infusion into a vein.

Cellulitis.—Cellulitis is a microbic inflammation of the cellular tissue. It may be due to staphylococci, to streptococci, to other pyogenic bacteria, or to mixed infection with two varieties of pyogenic organisms. The commonest form is streptococcus infection, and this is a variety of erysipelas. Infection with the *bacillus aërogenes capsulatus* causes *gangrenous cellulitis*. In cellulitis of the subcutaneous tissue the micro-organisms find entrance by means of a wound. Swelling precedes redness. The swelling is not so marked as in phlegmonous erysipelas, and the redness is darker and is less distinct than in cutaneous erysipelas. The redness of cellulitis is about the wound; it spreads but does not fade at the center as does ordinary erysipelas; red lines due to lymphangitis ascend the limb from the infected wound, and the anatomically associated lymphatic glands enlarge. In the wound and its neighborhood there is severe throbbing pain. The constitutional symptoms of infection develop rapidly. In trivial cases the lymphatics dispose of the poison and suppuration does not occur. In severe cases pus forms about the wound and lymphatic glands may suppurate. Phlegmonous erysipelas may develop, and septicemia or pyemia may arise.

Treatment.—Open, disinfect, and drain the wound. Paint iodin upon the skin over inflamed lymphatic vessels and glands and cover with ichthyol ointment or rub Credé's soluble silver ointment into the skin over the inflamed lymph-glands and vessels. Dress the wound and the adjacent inflamed area with hot antiseptic fomentations. It may be necessary to make incisions as in phlegmonous erysipelas. In some cases it is necessary to remove breaking-down glands. The constitutional treatment is that employed for septicemia.