SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

TREATMENT OF BOILS AND CARBUNCLES

BY

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Both boils and carbuncles are localized staphylococcal lesions involving the skin and subcutaneous tissues. A septicaemia is very uncommon, though a toxæmia is often seen, and in a consideration of the treatment not only must the local lesion be attended to but so must the general condition of the patient.

Boils

A boil often arises as the result of some irritating pressure on an unclean skin area in a person who, for some reason, is run down. The back of the neck is the commonest site, and the collar frequently has some aetiological importance. The treatment of an early boil in this position or elsewhere consists in removing the irritating pressure—such as from collar or braces—and covering the boil with two or three layers of elastoplast. The latter acts by protecting the boil from being rubbed and, what is more important, by splinting the inflamed area. Complete rest to an inflamed area is one of the elementary principles of therapy, but in the case of minor inflammatory lesions it is often forgotten. Collodion painted on to a boil and allowed to harden has been recommended, but it is not as good a splint as elastoplast. A circular piece of elastoplast a little larger than the boil is cut; in an average case this will be the size of a halfpenny, and it is stretched out and stuck on so that it covers the whole boil. A circle of elastoplast the size of a penny is then put on over this. A striking and immediate reduction in the pain follows, and in many cases the swelling quickly subsides and the boil disappears in an almost miraculous manner. If the boil begins to discharge a piece of elastoplast with a small hole in its centre, through which the pus may escape, is substituted for the first piece: this may be changed as it gets soiled. Thus treated the boil is likely to clear up and heal without leaving a scar.

With larger boils a decision has to be made as to whether operation is necessary and, if so, when it should be done. In the case of even a large boil early intervention is not advised. The contents are not so much pus as a core, or slough, which is a portion of dead tissue. Until the slough has separated operation should not be carried out, as the main object of operation is to remove the core and not to evacuate pus. The right moment for this is a matter of judgment, and until operation is necessary the best treatment for a large boil is to splint a wide area around it with several layers of elastoplast, leaving the whole boil exposed in the centre. This is covered with a thick layer of magnesium sulphate paste, over which are put several layers of gauze, wool, and a bandage. With this treatment a boil which at first may seem to require operation may recover without it. The magnesium sulphate paste has the following formula:

Exsiccated magnesium sulphate ...	...	2 parts
Glycerin (by weight) ...	...	1 part

It is much more efficacious when freshly prepared. When the paste is first applied it is rather painful, and it will be necessary to prescribe aspirin, veganin, or other suitable drugs for relief. When a boil requires operation a crucial incision under an anaesthetic (preferably gas or evipan) is made and the slough picked out with a pair of forceps. The edges of skin need not be cut away, and the tissues should not on any account be curetted or scraped. If the core is removed there is an almost immediate relief of pain, and healing is rapid and leaves very little scar.

Fomentations are rarely indicated, and are usually undesirable: if they are employed crops of small boils and pustules are likely to arise in the surrounding skin. If as the result of injudicious treatment or for any other reason fomentations seem to be indicated, the skin around the boil should be carefully but gently cleansed with ether and covered with ung. hydrarg. nit. dil. These precautions will prevent infection with staphylococci, and thus avoid further boils and pustules.

In cases of multiple boils, in addition to the treatment already outlined, local and general ultra-violet light may sometimes be used with advantage. It is important that the patient should have not only physical but also mental rest. It is striking how often a number of boils appear when a patient is worried or mentally overworked. The taking of yeast and various vitamins has been recommended, and injections of colloidal manganese and other substances have their advocates, but the exact value of these measures is doubtful. Vaccines, autogenous if possible, may be used; but here again their value is doubtful, and the best and often the only way to get a crop of boils to disappear is to enforce absolute rest, a complete change of air, and scrupulous though not vigorous cleansing of the affected parts.

Carbuncles

Carbuncles have many points in common with boils, but they are, of course, much more dangerous. A facial carbuncle is a most serious lesion, and if not carefully treated is likely to prove fatal as the result of infection travelling by way of the facial vein or pterygoid plexus and causing cavernous sinus thrombosis.

A great variety of treatments have been employed for carbuncles, but the general tendency in recent years has been towards conservatism. In the past, and in the hands of some surgeons still, excision of the whole carbuncle is the method of choice, but this is not advised. Except in the case of small carbuncles, the patient should be put to bed, encouraged to drink increased quantities of fluid, and the bowels should be made to act regularly (though overpurging is to be avoided). It is important, particularly with underfed patients, that they should eat an adequate amount of nourishing food, and to aid this bitters or alcohol may be necessary. It is essential in all cases of carbuncle to test the urine, particularly for sugar. Diabetics are more likely to suffer badly with carbuncles: when they have any inflammatory condition the amount of glycosuria is likely to be increased, and until this is properly attended to by diet and insulin recovery of the carbuncle will be delayed. The use of

vaccines and sera in the treatment of carbuncles has not found much favour, but Ovens reports good results following the injection of anti-staphylococcal serum intramuscularly.

The local treatment of the carbuncle consists in applying a 12 per cent. solution of sodium sulphate. This is less painful and more easily applied than magnesium sulphate paste, and also less painful and more efficient than hypertonic saline, which is sometimes used. The solution of sodium sulphate is warmed to body temperature and several pieces of gauze (fluffed up, not evenly folded) are soaked in it and put on the carbuncle. They are covered with a piece of jaconet, over which is put an ample covering of wool, and are then fixed firmly, but not tightly, with a bandage. This warm sodium sulphate pack should be changed two-hourly throughout the day and once or twice at night if the patient is awake. In the early stages of a carbuncle there is often much pain, and this must be controlled adequately with drugs, as sleep and rest are essential. If morphine is necessary it should be given. With this treatment nearly all carbuncles will remain local: pus and slough will be discharged, and healing will be as quick as, if not quicker than, if an excision had been made and scar tissue will be less. An anaesthetic is avoided; this is sometimes important, because carbuncular subjects are often unsuitable for anaesthetics. In a few cases, when the carbuncle seems deep and is very slow in starting to discharge, two clean crucial incisions may be made into it. These should not extend into the surrounding unaffected tissues. Following the incisions treatment with sodium sulphate packs should be continued, and the infected necrotic tissue will soon begin to come away freely. When this pack treatment is carried out, either with or without crucial incisions, the whole carbuncle gradually discharges itself, usually with the loss of some skin, and a clean granulating wound is left. The sodium sulphate dressings should be continued until all dead tissue has separated. Healing is now rapid, and a dressing of gauze covered with sterile vaseline is applied, being changed once in every three days. The scar that is left is much less conspicuous and ugly than when a complete excision of a carbuncle has been carried out.

Another and entirely different treatment which has met with a considerable measure of success in the last few years is by short-wave diathermy. Its disadvantage is that the necessary apparatus is not everywhere available. The carbuncle is covered with a layer of gauze, and one of the electrodes from the diathermy machine is put over this but is separated from it by a layer of felt. If the carbuncle is on the back of the neck the other electrode is put either on the forehead or on the front of the neck. When the current is turned on the patient gets a comfortable feeling of warmth in the neck; this treatment is continued for ten to fifteen minutes. Great relief is often experienced even after the first application, the effect of which seems to be to make the carbuncle clear up more quickly. The diathermy should be given daily until the discharge of dead tissue occurs freely. During the days when this treatment is being given, and afterwards, the sodium sulphate packs may be put on with advantage.

Facial Carbuncles

These require special mention owing to their very grave prognosis. Carbuncles on the face are likely to be followed by cavernous sinus thrombosis (an invariably fatal condition), particularly if they are squeezed or scraped or cut. Even a small facial carbuncle must be treated seriously from the beginning and the patient put to bed.

The lesion should be touched and handled as little as possible: that part of the face on which it is situated should be immobilized by covering a wide area around it with elastoplast, the carbuncle itself being left exposed. Further, to obviate movement of the part the patient should not be allowed to talk, and only fluids should be given. If the carbuncle is near the lips all drinking should be through a straw. It should be bathed every two hours with hot 12 per cent. sodium sulphate solution for half an hour at a time. This is best carried out by holding the face over a basin of the very hot solution and keeping the part really hot by holding a large pad of absorbent cotton-wool, soaked in the solution, gently against the carbuncle for a minute or two at a time.

On no account must any incision be made into a carbuncle on the face, and all hands wanting to squeeze it must be held back. All sloughs should be allowed to separate by themselves, or at the most should be gently bathed away. Incisions into or excision of facial carbuncles are likely, even if they do not cause cavernous sinus thrombosis, to leave unsightly scars, and such deformities as ectropion or a distorted mouth.

Spreading Carbuncles

Certain carbuncles do not remain localized but continue to spread, sometimes at an alarming rate. This as a rule occurs in patients who are especially debilitated either from diabetes or some other cause. When adequate general measures and the local treatments described above are carried out a carbuncle usually soon ceases to spread; but if this is not the case further steps may be required. There are two alternatives—either injection of blood into the surrounding tissues or excision of the carbuncle. The former is less drastic; but although it may not be quite as effective it is worth trying. About half a cubic centimetre of a strong solution of sodium citrate (25 per cent.) is drawn into a 20-c.cm. syringe, which is then filled with blood from the patient's vein. This is injected at a number of points of puncture about an inch apart around the carbuncle, outside the indurated area. About 5 c.cm. are injected at each place, deep down near the core of the lesion. Fifty or sixty cubic centimetres of blood may be required in all.

If the injection of blood does not stop the carbuncle spreading, the latter should be excised. Ideally the whole carbuncle should be excised, but in the case of a very large one, when only one edge is spreading, it may be sufficient to excise that part alone, as excision of the whole lesion is such a severe operation. When a carbuncle is excised healthy tissues just beyond the edge should be cut through and the incision carried deep enough to get underneath the carbuncle, removing all infected tissue. After excision the wound is packed with gauze wrung out of flavine (1 in 1,000), so as to control the bleeding.

Carbuncle in Diabetics

Carbuncles have a worse prognosis when they occur in diabetics. It should be remembered that in some cases a carbuncle may have an accompanying glycosuria which is not due to true diabetes. It is essential to get the diabetes under control as soon as possible, and to this end it is advisable to obtain the help of an expert in this disease, as in the presence of severe infections diabetes may be very difficult to control with insulin. In diabetics, owing to the grave prognosis and their poor powers of resisting infection, it is usually inadvisable to try conservative treatment with sodium sulphate packs, for if time is wasted the case may easily and quickly get out of

hand. Instead, complete excision should be carried out while the carbuncle is still small. If this is done and the diabetes is got under control immediately, the result is satisfactory, but no time must be lost.

Complications of Carbuncles

One cannot leave the subject of treatment of carbuncles without a brief reference to certain complications. Enough has been said about cavernous sinus thrombosis in connexion with carbuncles on the face, and how it is to be avoided. Nothing can be done once the condition is established.

Septicaemia and pyaemia sometimes occur, and may be the cause of a persistent pyrexia when the carbuncle itself appears to be progressing satisfactorily. In some cases the carbuncle may be practically healed, when the temperature rises and there are signs of infection in some other part of the body. A place where this is likely to occur is in the perinephric tissues. An abscess may form here and be easily overlooked as the symptoms are not pronounced, and unless the loin is palpated the condition may not be recognized for several days. Such an abscess, if adequately opened, will heal without leaving any ill effects on the kidney. In one case a very severe metastatic mediastinitis came on when a carbuncle on the neck was quite quiet and almost healed.

VITAL BALANCE-SHEET OF 1935

REGISTRAR-GENERAL'S REVIEW

The text volume of the Registrar-General's Statistical Review of England and Wales for 1935¹ contains the official commentary on the two volumes of vital statistics already published—namely, Tables Part I Medical and Tables Part II Civil. The report deals with the statistics of births, deaths, and marriages registered in 1935, the estimates of population, registrations under the Legitimacy Act and the Adoption of Children Act, and with the numbers of parliamentary and local government electors.

Population Figures

The estimate of the population of England and Wales in the middle of 1935 was 40,645,000 persons, of whom 19,500,000 were males and 21,145,000 females. The total is 178,000, or 0.44 per cent., greater than the estimate for the previous year and 693,000, or 1.7 per cent., greater than the population at the Census of 1931. The figure of 693,000 is made up of the excess of births over deaths, about 493,000, and the balance of migration, 200,000. The average ages of the estimated population are 32.7 years for males and 34.5 for females. These are gradually increasing; in 1931 they were 31.8 and 33.5 respectively, and in 1921 29.9 and 31.2. The marriages registered during 1935 were 349,536 in number.

The live births registered in 1935 were 598,756, or 1,114 more than in 1934. The corresponding birth rate was 14.7 per 1,000 population. A comparison with the rates in many other countries shows that only three of them—Austria, Norway, and Sweden—had lower rates. The number of male births exceeded the number of female births in the ratio of 1,056 to 1,000. The ratio is very inconstant, and may be low in one year and high in another in the same region. Stillbirths formed 4.1 per cent. of the total births registered. The natural increase of population in 1935—that is, the excess of live births over deaths—was 121,355, as compared with 120,832 in 1934 and 83,948 in 1933. The rate is 3 per 1,000 population.

¹ H.M. Stationery Office, price 3s.

Analysis of Deaths

The report reviews the mortality from various causes during 1935, and also contains several special studies.

Infant Mortality.—Comparison of the rates in 1931–5 with those in 1921–5 showed a decline during the ten years ranging from about 5 per cent. for infants under 1 month to 30 per cent. for infants aged 6 to 12 months. Comparing the group of towns whose infant mortality rates in 1935 were 90 per 1,000 live births or over (Bootle, Gateshead, St. Helens, Sunderland, Wigan) with the group of towns with rates below 40 (Bath, Eastbourne, Exeter, Great Yarmouth, Ipswich, Oxford), the causes of death responsible for most of the excess were measles, whooping-cough, bronchitis, pneumonia, and diarrhoea.

Tuberculosis.—A study of the decline in tuberculosis mortality since 1851 shows that the mortality of children under 5 from this cause has fallen to about one-ninth of the level of 1851–60, and of children aged 5 to 15 to less than one-fifth. At ages 15 to 25 mortality of men has fallen to one-quarter and of women to less than one-third, and rates at higher ages have declined to less than one-third of their values in 1851–60. The standardized death rate from respiratory tuberculosis was 28 per cent. lower, and from other forms of tuberculosis about 40 per cent. lower, for each sex in 1935 than the average rates for 1921–30. Among English rural areas those of Durham had the highest tuberculosis rates for young adult males and those of Herefordshire had the highest phthisis rate for young adult females, but several of the Welsh counties, notably Caernarvonshire, gave rates in excess of any English county.

Cancer mortality at various ages is compared in 1911–20, 1921–30, and 1931–5, and it is pointed out that the recorded mortality from cancer of some parts of the body has continued to increase since 1921–30 at advanced ages although it has become stationary or begun to decline in middle age, and it seems necessary to conclude that the average age of appearance of cancer in some of these organs is becoming later. For a few organs, on the other hand, cancer mortality continues to increase at almost every age.

Maternal Deaths.—As a result of special inquiries during 1935 the relation of maternal deaths to the number of previous confinements, or to the occurrence of a twin or stillbirth or abortion, is shown, and the distribution of abortion deaths in each region during 1926–35 is also given.

Deaths from Poisoning and Violence.—Classification of the deaths since 1924 due to poisoning shows that in 1933–5, although the suicide rate by the use of solid and liquid poisons had almost ceased to rise, the resort to coal gas for this purpose was still increasing rapidly. Among the poisons which showed important increases since 1930–2 as suicidal agents were the barbiturate drugs, aspirin, and opium derivatives, while the slight increase in accidental deaths from solid and liquid poisons in the same period was more than accounted for by deaths due to barbiturates. In 1935 the cause principally responsible for the excess of mortality among males resident in rural areas over those resident in cities was road transport, other contributory causes being accidents in mines or quarries or by drowning. Female mortality caused by road transport was, in contrast with males, greatest for residents in Greater London. Analysis of the total mortality in 1935 by violence, other than suicide, shows that for children under 5 the advantage of a greater freedom from fatal accident which was enjoyed by the rural child in 1911–20 has almost disappeared, and at the school ages it has been replaced by a greater mortality risk in the rural districts than in the towns. At ages 25 to 55 the female risk, which in 1911–20 was greatest for town dwellers, has become greatest for residents in rural districts, but after 55 a reversal to a large excess of risk for town dwellers occurs. For males the greater risk to rural dwellers persists up to 65 before the reversal takes place.