DIABETIC ANGIOPATHY — SURGICAL PROBLEMS AND POSSIBILITIES

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Vascular lesions of the lower limbs belong to the most common and severe diabetes mellitus manifestations (1—3). The severity of diabetic angiopathies and their marked inclination to development of complications is explained to a great extent by the combination of vascular alterations of two types: macroangiopathia — obliterating atherosclerosis of the arteries with an expressed tendency towards affecting the distal segments of the extremities, and microangiopathia — lesions of the terminal vascular bed, mainly of capillaries and arterioles (1—5).

Material and methods

In the present work our clinical experience from the treatment of total of 195 diabetic angiopathy patients during the last 6 years (1980—1985) was presented. Most patients (about 74 per cent of the cases) were aged over 60 years. The mean duration of the disease is longer than 10 years in 55 per cent of the patients. Anamnestically, about 13 per cent of diabetic angiopathy patients considered the appearance of limb gangraena related to a preceding trauma. Lower limb segment most often affected (in 70 per cent of the cases) was the popliteal one. However, the level of damage rose with increasing duration of the illness thus involving the femuro-popliteal and even the iliac arteries. All the hospitalized patients were at the 4th stage of the disease, i. e. with limb gangraena. 96 patients had limited necrosis (toes and distal part of the foot only) but 99 ones had severe foot lesions. Most of them had differently expressed accompanying diseases — ischemic heart disease, myocardiosclerosis and hypertension, survived cerebral insult — 52 patients (26.7 per cent), respiratory tract diseases — chronic bronchitis, pulmonary emphysema, bronchopneumoniae — 10 patients (5.1 per cent), hepatic and renal lesions — 8 patients (4.1 per cent), etc. We determined the state of the magistral blood flow in the extremities according to the data from the oscillographic and Doppler sonographic investgiation as well as from skin electrothermometry.

Results and discussion

Our results demonstrated that there was a correlation between the data from the three investigation methods in patients with diabetic angiopathy at the first three stages of the disease. The changes were characterized by high amplitudes in the upper part of the crus, high regional systolic pressure even in the peripheral arteries and an adequate skin temperature. With patients showing limited necrotic foot changes oscillations and parameters of regional systolic pressure decreased while skin temperature rose. The latter fact could be explained by the presence of an inflammatory process due to the humid character of the gangraena.

The treatment of diabetic lesions was complex and included diabetes compensation (insulin therapy), normalization of metabolism (lipotropic drugs, vitamins, anabolic steroids in combination with antibiotics, adequate hydratation), medicamentous vasodilatation stimulating collateral circulation and means acting on microcirculation (sadamine, nicotinic acid, prodectine, actehemil, trental, physioterapy). One of the important aims of the treatment was the transition of the humid gangraena into a dry necrosis, restricting of the process enabling thus the most economic surgical interventions. By using of conservative treatment, however, this task was successfully solved only in patients with insignificant lesions — gangraena of single toes and of the most distal part of the foot. Necrectomies with phalangeal amputations were performed in 93 patients.

As already mentioned, 99 patients had large foot lesions. 39 of them were conservatively treated as described above. However, our attempts to save the leg failed in 34 cases and a high amputation was carried out. Only in 5 patients necrectomies could be performed (12.8 per cent). That was why we recently introduced the so-called methods of intensive conservative treatment — permanent intraarterial infusion realized by using of the epigastric artery. The infusate included most of the means mentioned but it enabled their high concentration in loco morbi. A similar tactics was applied in 60 patients. Leg amputation as an outcome was done in 19 of them that meaned that 41 legs were saved (68.3 per cent).

This success can be explained by the relatively well-restored blood supply of the limb making possible medicamentous penetration to the most peripheral segments of the leg. It is characteristic that in 6 patients of the second group during a time interval between one and 10 years a gangraena of the other lower limb has occured. But this has not been observed in any cases of patients with necrectomy treated with continuous intraarterial infusion.

It is considered that diabetes mellitus worsens considerably the outcome from reconstructive operations (1, 2, 6). We have performed reconstructive operations in 3 patients only and they are successful in one case only.

There are 19 lethal cases, i. e. almost every tenth patient (9.7 per cent of the cases) with diabetic gangraena is intimidated with death.

The improvement of the results from treatment is possible only by the early diagnosis of the diabetes mellitus, its adequate correction during hospitalization by an endocrinologist and by energic measures aiming the cessation of the advancing necrotic process thus enabling maximally economic amputations.

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ДИАБЕТИЧЕСКАЯ АНГИОПАТИЯ — ХИРУРГИЧЕСКИЕ ПРОБЛЕМЫ И ВОЗМОЖНОСТИ

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РЕЗЮМЕ

Авторы рассматривают хирургические проблемы у больных с диабетической гангреной нижних конечностей, а также результаты лечения этого заболевания.

Установлено, что наиболее часто (в 70 % всех случаев) был затронут подколенный сегмент нижней конечности, где, по данным ультразвукового доплерового исследования, обнаружены высокие стоимости регионарного систолического давления. Консервативное лечение привело к ограничению некротического процесс и дало возможность сделать щадящие ампутации лишь у больных с незначительными поражениями стопы.

Более чем у 50 % больных была обширная гангрена стопы. У 27 % всех больных были установлены тяжелые сопутствующие заболевания. В подобной ситуации в последние годы используются методы интенсивного консервативного лечения — применяется перманентная интраартериальная инфузия через эпигастральную артерию. Это позволило сохранить конечности у 68 % больных. Общий леталитет составляет около 10 % всех случаев.