

DETERMINING THE DEGREE OF ANTERIOR ABDOMINAL WALL TISSUE DEFICIENCY IN ITS DEFECTS



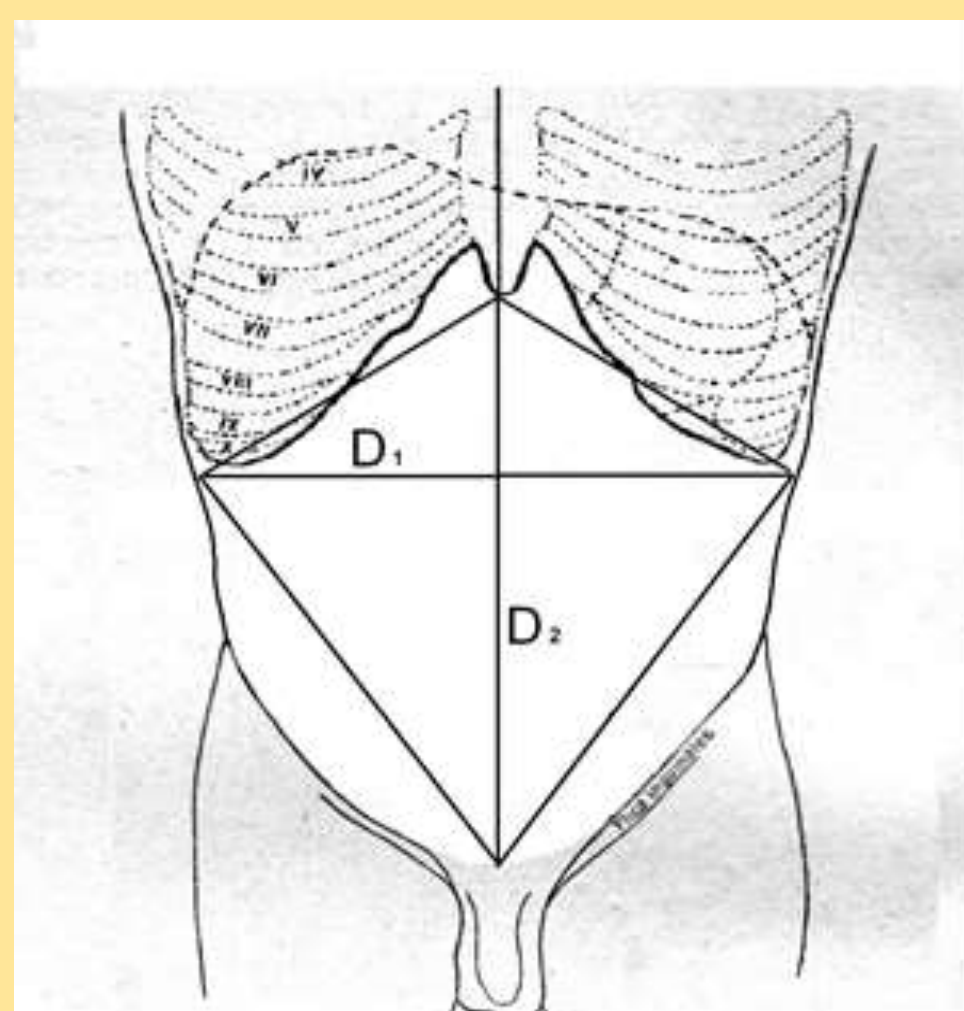
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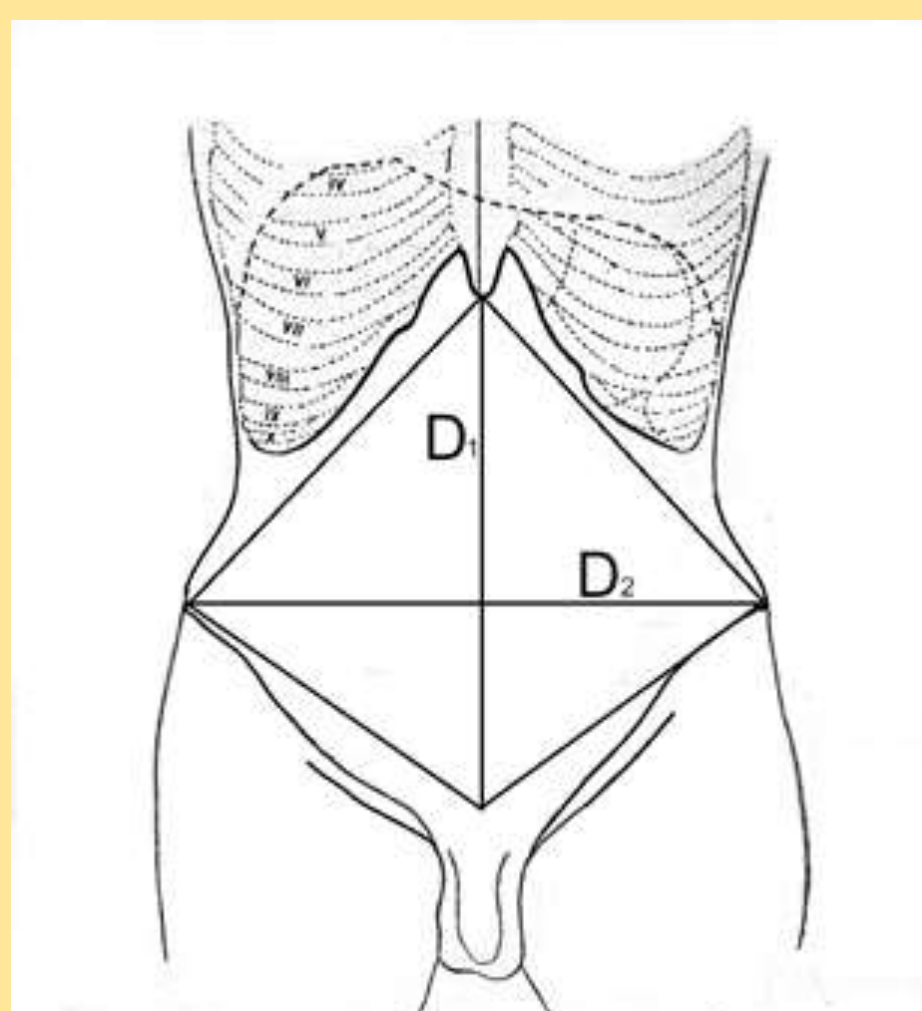
Actuality. Diagnosis and subsequent determination of the anatomical properties of various anterior abdominal wall (AAW) defects often require detailed information about their dimensions. The latest EHS recommendations for calculating the size of an AAW defect have led to the definition of only the width as the main parameter of its size. The disadvantage of this approach is that it does not take into account the area of the defect and the ratio of its size to the size of the AAW. .

The goal of the work. To develop a method for determining the deficiency of AAW tissues in its defects, which, under the conditions of determining the appropriate indicator of the AAW defect depending on the type of patient's constitution and according to the mathematically justified systematization of the obtained data, allows objectively assessing the degree of deficiency of AAW tissues for the selection of individual treatment tactics.

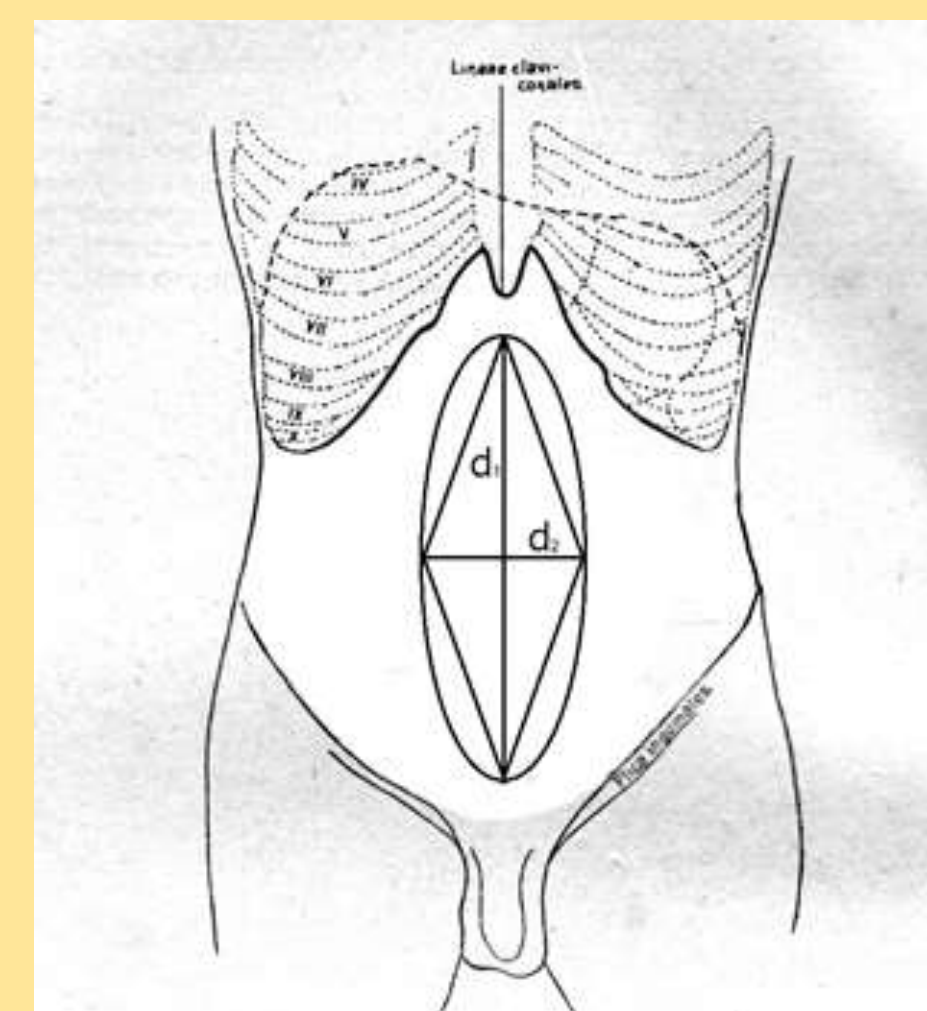
Materials and methods. The following actions were performed: determination of the parameters of the AAW - determination of the parameters of the AAW defect - comparison of the area of the defect to the area of the AAW - determination of the AAW defect index - determination of the degree of deficiency of the AAW tissues (DDAAWT). Based on the results obtained, the ratio between the area of the AAW defect and the area of the AAW was calculated, which was expressed in the percentage index of the anterior abdominal wall defect (IAAWD).



Scheme for determining the parameters of the AAW in patients with dolichomorphic body structure



Scheme for determining the parameters of the AAW in patients with brachymorphic body structure



Scheme for determining the parameters of the AAW defecte

Based on the obtained dimensions, the area of the AAW – S was calculated as the area of a convex quadrilateral, according to the formula $S = \frac{1}{2} D_1 \cdot D_2 \cdot \sin \alpha$. Since $\sin 90^\circ = 1$, then the area of the AAW – $S = \frac{1}{2} D_1 \cdot D_2$. The area of the AAW defect – S1 was determined as the area of a rhombus inscribed in an oval, according to the formula $S1 = \frac{1}{2} d_1 \cdot d_2$. Based on the obtained results, the ratio between the area of the AAW defect and the area of the AAW was calculated, which was expressed as a percentage of the anterior abdominal wall defect (AAWD).

$$IAAWD = \frac{S1 \times 100\%}{S}$$

where: S – area of the AAW; S1 – area of the AAW defect.

Further, through mathematical analysis, the obtained data on the dependence of the degree of deficiency of AAW tissues on IAAWD were systematized and generalized, which is demonstrated in Table 1

Research results. Through the mathematical analysis, the data obtained by us on the dependence of the degree of deficiency of the AAW tissues on the AAVW were systematized and generalized.

Index of the anterior abdominal wall defect (IAAWD) (%)	Degree of deficiency of the tissues anterior abdominal wall
to 10	1
from 11 to 25	2
from 26 to 40	3
from 41 to 60	4
> 60	5

Conclusions. The proposed method allows to objectively assess the degree of deficiency of the anterior abdominal wall tissues depending on the percentage of the anterior abdominal wall defect, according to the patient's constitution, and thereby individualize the choice of the anterior abdominal wall plastic surgery method.