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Mini Review

ERRORS AND DIAGNOSTIC DIFFICULTIES IN THE PEDIATRIC PRACTICE

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ABSTRACT

The medical error is defined as a professional misconduct - most often it comes down to:
- errors in diagnosis; treatment errors; errors in subsequent medical care, i.e. improper behavior implementation; errors, which exceed the limits of the free medical choice – i.e. freedom of action. One of the most common mistakes is a discrepancy between the initial and the final diagnosis of sick children with a cardiovascular system disease, especially whenheart murmur is observed.
- patients whoseheart murmur is assessed innocent and the final diagnosis is cardiomyopathy
-initial diagnosis is cardiomyopathy, and the final diagnosis is normal hearth
We present three clinical cases with a potential risk of evaluation error in the clinical condition, related to diseases of the cardiovascular system.
The presented patients with the aforementioned nosological entities are indicative of the difficulties in determining a correct clinical diagnosis, respectively conductingan effective treatment and risk prevention from fatal ending of the described severe diseases.
The medical error, there is only one single importance - it gives a lesson to everyone else!

Key words: ALCAPA, Heart failure, Bland-White-Garland syndrome

What is the most common cause of medical errors?
What are the most common mistakes that they make?
Are they correctable or is any medical error fatal?

The medical error can be defined as a professional error - most oftenit is caused due to:
- Errors in diagnosis;
- Errors in treatment;
- Errors in subsequent care, i.e. non-proper behavior;
- Errors whichexceed the limitsof free medicalchoice – i.e. freedom of action.

One of the reasons which could cause a medical error is:

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- stop gathering medical knowledge;
- basing the diagnosis (90%) on hardware and laboratory tests;
- **incorrectly downloaded** case history;
- lack of in-depth conversation with the patient's parents;
- not getting thoroughly acquainted with the patient's complaints, mental state and suffering;
- the patient is often given 15-20 medicaments with prolonged use;
- leads to serious damage to liver, kidneys and brain function;
- even after examination, some **doctors** proceed with inert approach, by continuing to prescribe whatever their colleagues have previously used during the previous examinations, without assessing the clinical status;
- lack of ongoing training after completing the medical education;

one of the most common mistakes is a discrepancy between the initial and final diagnosis when treating sick children with a

disease of the cardiovascular system, especially when cardiac murmur is heard.

- patients where cardiac noise is judged as innocent, but the final diagnosis is cardiomyopathy;
- initial diagnosis is cardiomyopathy, and the final diagnosis is normal heart

Possible Risk of Errors in Diseases of the Cardiovascular System

1. Clinical case of D.V.D – 3 m.

Directed for hospitalization with a diagnosis of pneumonia. Respiratory insufficiency (RI). Acute heart failure.Myocarditis.In the course of hospitalization- changes in the cardiopulmonary status, with downward trend. Control radiography - cardiomegaly, pulmonary overload. Ultrasound examinations - Severe LV dilatation / LP.

During the clinical follow up and control echocardiographic examination, is established that it is a case of ALCAPA syndrome (anomalous passing of LKA of the anterolateral wall of the trunk of the pulmonary artery) (1, 3, 5, 7) **(Figures 1-4).**

Clinical Forms

90%	10%
• Breastfeeding- 6-10 weeks	Aged
• HF	RPN

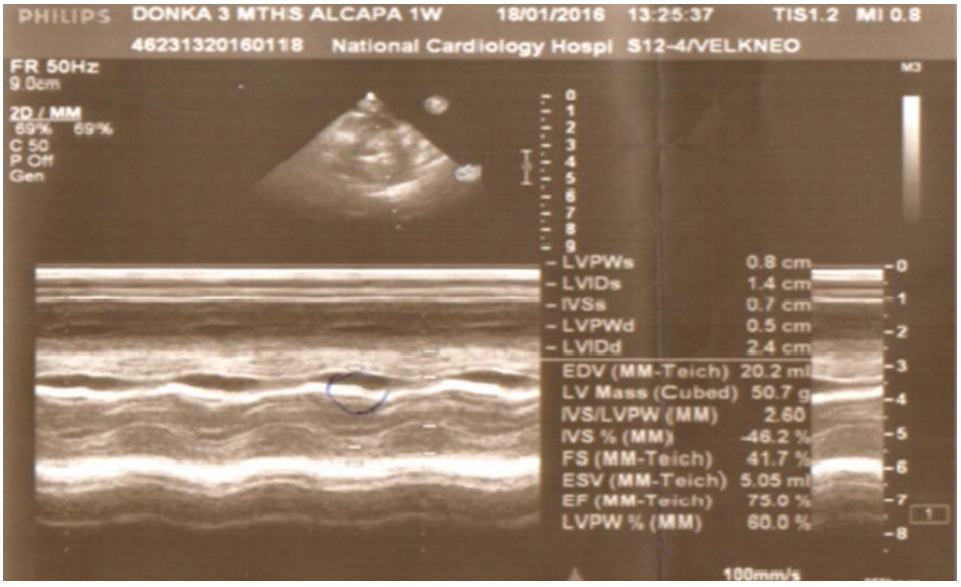

Figure 1. Endocardial **fibroelastosis** in short axial cut on the papillary muscles level

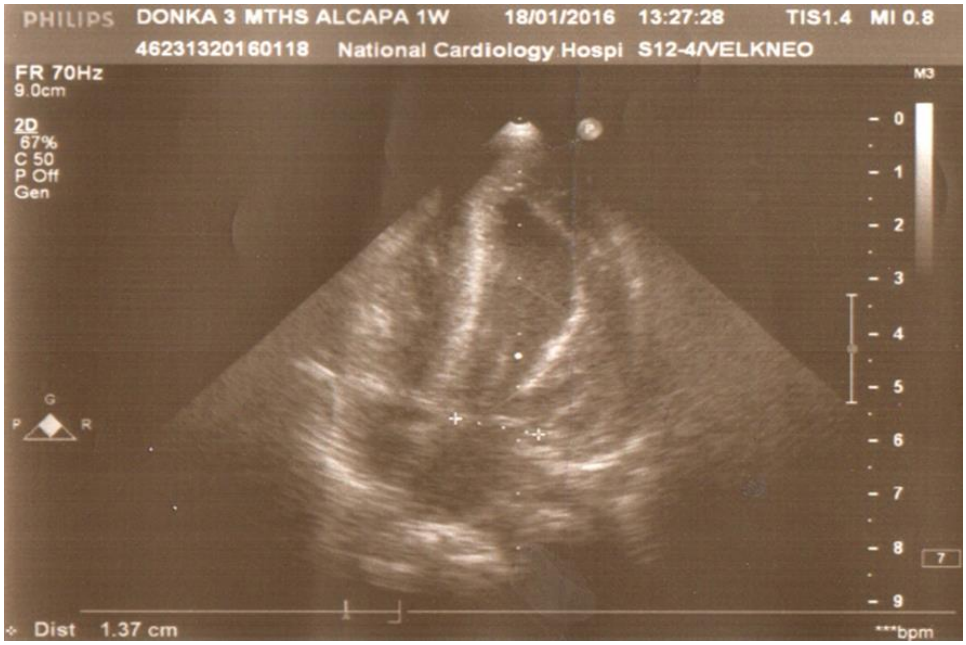

Figure 2. Mitral valve papillary muscle fibrosis and severe **fibroelastosis** of the endocardium of the left ventricular

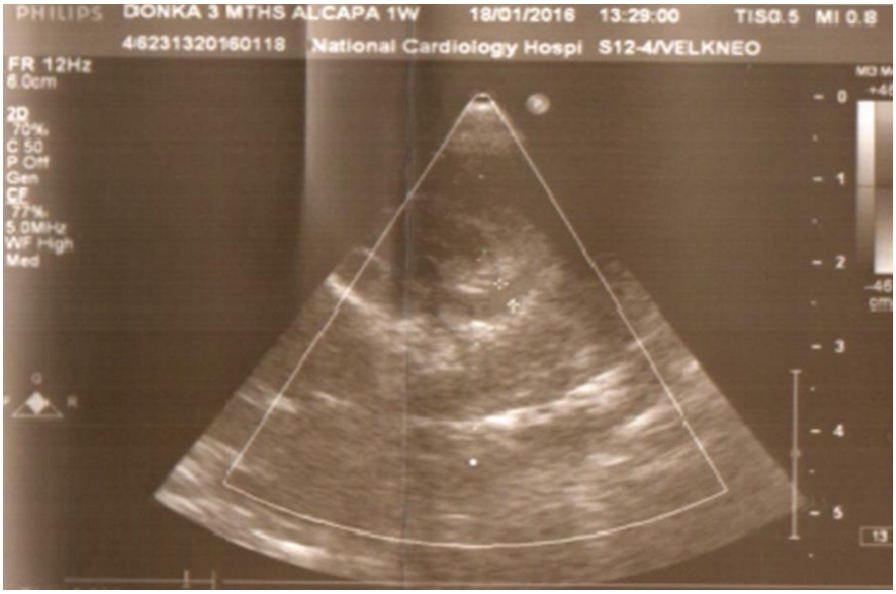

Figure 3. The anomalous left coronary artery, which comes out from the pulmonary artery with retrograde flow

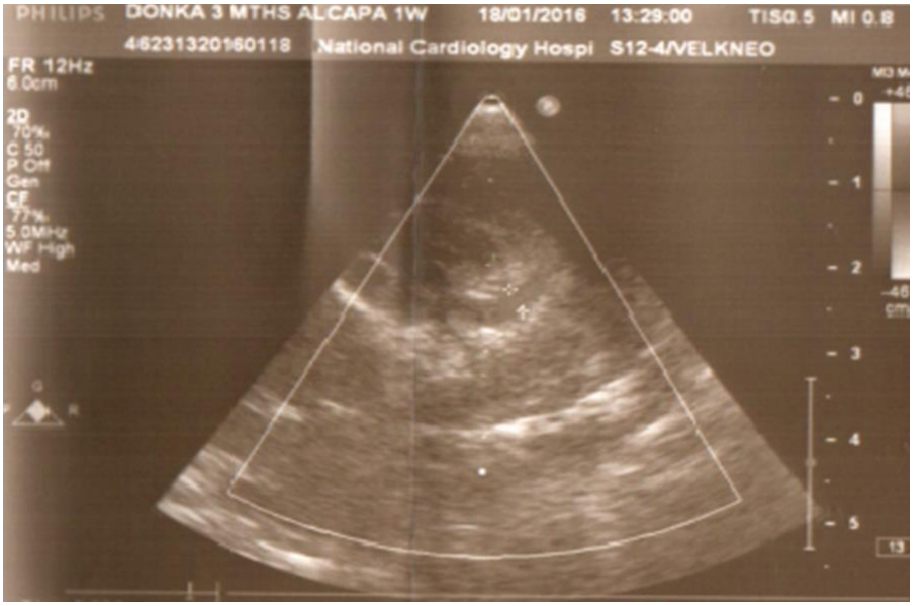

Figure 4. **Three-dimensional/Three-sized** structure of the left and right ventricle

DISCUSSION

ALCAPA syndrome known also as Bland-White-Garland syndrome, is a rare congenital anomaly that occurs with a frequency of 1 in 300,000 live births (1) and constitutes 0.25-0.5% of all congenital heart defects. It is typically manifested as an isolated defect, but in 5% of the cases it may be associated with other cardiac abnormalities, such as atrial septal defect, ventricular septal defect, coarctation of the aorta (3) **(Figure 5).**

ALCAPA is a result of the "coronary steal" (coronary withdrawal) phenomenon in which the left / right shunt leads to abnormal left ventricular perfusion. The syndrome is a common cause for myocardial ischemia or heart attack. Without surgery 90% of the children die before the end of the first year. Those who live longer express myocardial infarction, left ventricular dysfunction and mitral regurgitation, or myocardial ischemia, could become a cause for the syndrome of sudden cardiac death.

Early diagnosis and subsequent surgery to restore the two coronary arteries, gives excellent results and leads to gradual myocardial recovery.

In DD were discussed:
1. Kawasaki disease
2. Arterio-coronary sinus fistula
3.Polyarteritis **nodosa** or Takayasu arthritis
4.Ehlers-Danlos syndrome
5.Hereditary hemorrhagic **teleangiektasya**
6.Trauma
7.Hyperlipidemia
8.Atherosclerotic-related coronary artery ectasia

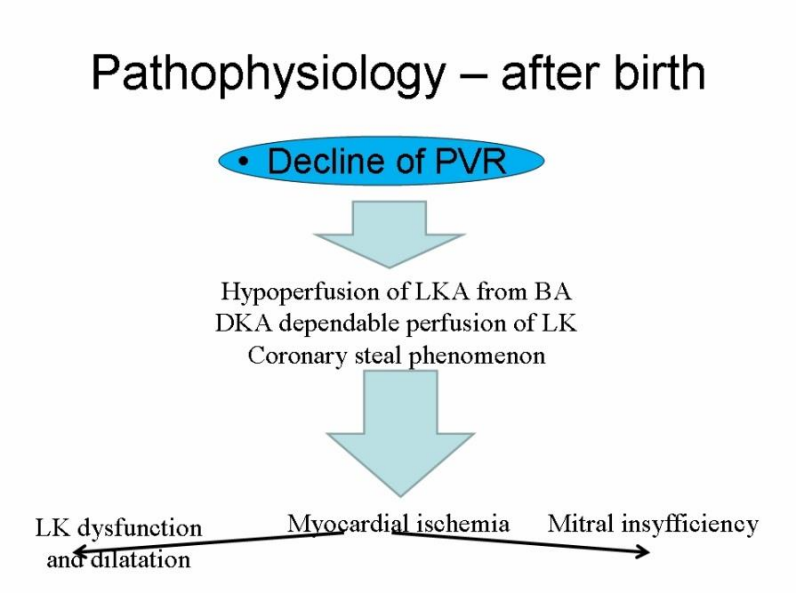

Figure 5. Pathophysiology after birth

Surgical treatment of ALCAPA - syndrome - includes direct **reanastomosis** of anomalous LKA emanating from Truncus pulmonalis to the left Aortic sinus of Valsalva. The operation is performed under ESC (Extracorporeal circulation).

In case direct **reanastomosis** is not possible- remoteness of LKA - stool by the front wall of BA or higher - (risk of kinking of the artery during surgery) is used the so called operation of Takeuchi - **tunnel from the** pericardium or PTFE grafts which anastomosed Ao with LKA (2,4,6**) (Figures 6, 7).**

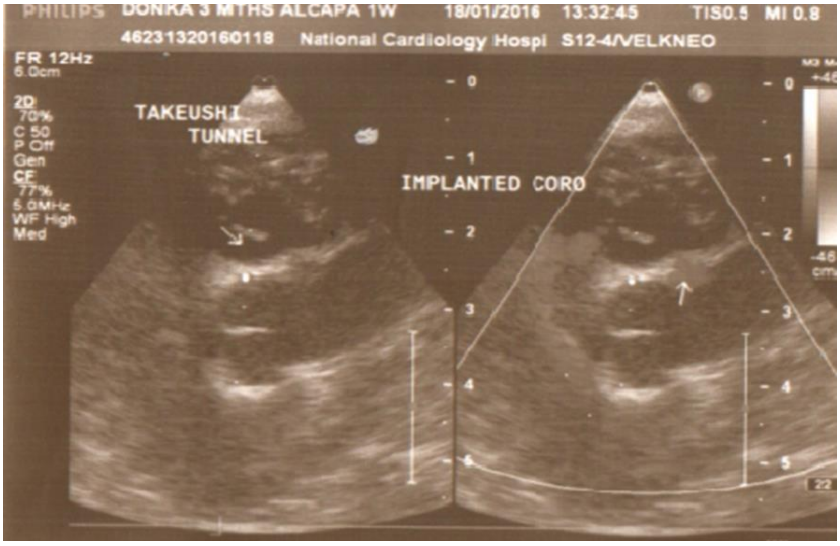

Figure 6. Postoperatively restored left coronary artery with osteumin the aorta and Takeuchi tunnel from pericardium, between the osteum of the left coronary artery and the trunk of the left coronary artery

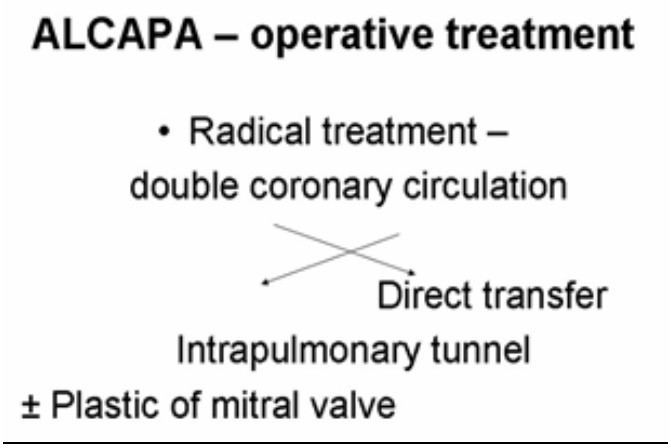

Figure 7. ALCAPA – operative treatment

Problems and complications

- Preoperative HF!
- Intraoperative HF!
- Postoperative HF!

Sometimes during severe dilatation of the Mitral ring and high MI a plastic of the Mitral valve is being made, but the results are inconsistent.

The **operative/surgery** mortality – worldwide-when EKMO is present (extracorporeal membrane oxygenation) up to 10%.

In Bulgaria - **operative/surgery** mortality is higher-up to 20% (in the absence of EKMO).

The main postoperative complications - severe and persistent heart failure due to ischemic fibrosis and LV remodeling.In the case of our patient, a successful surgical correction has been completed.

CONCLUSIONS

1. The submitted clinical case illustrates that the timely and correct diagnosis as well as the effective surgical intervention have averted the risk of death of the patient.
2. The variation in clinical manifestations of inconsolable conservative treatment heart failure, indicates the need of a team approach as well as the need of highly specialized research.
3. Only the good medical training, in-depth DD and flexibility during the process of the diagnostic-therapeutic approach can guarantee a good result and save children's lives.

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