DYNAMIC BUBBLE TRAP CAN REPLACE AN ARTERIAL FILTER DURING CARDIOPULMONARY BYPASS SURGERY
STEFAN GÖRITZ, HELMUT SCHELKLE, JOACHIM-GERD REIN AND SIMON URBANEK
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THE PREVENTION AND FILTRATION OF EMBOLI IS MUCH MORE EFFECTIVE THAN THE THERAPY OF IT’S CONSEQUENCES.

THE DBT IS THE ANSWER FOR A PROBLEM BEING IGNORED FOR A LONG TIME DUE TO THE ABSENCE OF A SOLUTION.

WORKING PRINCIPLE
The DBT works on the principle of radial acceleration (with centrifugal forces). As blood passes through the fixed helix, the blood flow is turned into a rotating stream. Due to the centrifugal forces the more buoyant (lighter in physical weight) microbubbles are being concentrated in the center of the blood flow axis. Downstream at the distal end of the DBT is a small collection tube, where these bubbles are separated with a small blood volume and taken through the recirculation line to the cardiomyotomy reservoir.

FEATURES
- Constant and effective elimination of microair due to the dynamic filtration
- Reliable microair removal up to 97% due to the principle of centrifugal forces
- Easy priming due to small surface area and self-deairing through working principle.
- Compared to arterial filters the DBT has up to 500 times less foreign surface area.
- No hemolysis and no complement activation detectable due to gentle blood handling.
- DBT is substituting a piece of arterial tube. Effective priming volume is only 7ml.

CASE REPORT FROM AN ON-PUMP CABG CASE
- total bubble reduction through DBT: 80% from 34.121
- clinical relevant bubbles removed up to 90%
- without the DBT 2.267 bubbles >40(micro)M would have reached the patient
- 97% of the bubbles have been removed by the DBT

- The DBT is the answer for a problem being ignored for a long time due to the absence of a solution.

- DBT can replace arterial filter during CPB - Facts on arterial filters
  - the efficacy of static screen filters is limited
  - if many bubbles occur, the bigger part can be detected behind the filter with delay
  - despite of a mesh size of 40 µm bubbles up to 120 µm occur behind the filter
  - a static screen filter is less effective the more bubbles enter it
  - The efficacy of the DBT is not at all being influenced by the number of micro air
  - The DBT always reduces at least 75% of all bubbles
  - The DBT therefore reduces micro air significantly better than the arterial filter

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