Reviewer's report

Title: The performance of Contegra conduit for reconstruction of the right ventricular outflow tract: a review

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Reviewer: George Krasopoulos

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The manuscript entitled “The performance of Contegra conduit for reconstruction of the right ventricular outflow tract: a review” by Protopapas A. D. & Athanasiou T. is reviewing the literature for early and mid term result of the usage of Contegra graft for RVOT reconstruction.

The experience concerning the use of Contegra graft for RVOT reconstruction is limited and fragmented in the literature. This first attempt to summarise the results obtained from different centres should be congratulated.

The lack of consensus regarding the type of conduit that may be best for RVOT reconstruction of congenital anomalies highlights the fact that no “perfect” solution is available yet. It is important therefore for surgeons who are faced with this problem to be able to formulate an evidenced base opinion on risk and benefits linked to each and every one of the available techniques and conduits.

As this article offers a comprehensive review of early and mid term results from the usage of Contegra graft for RVOT reconstruction it should be considered for publication. However, certain changes should be considered to make the manuscript easier to read and further develop some of the points of interest.

Minor Essential revisions

• Table 1: The title should be changed to “Perioperative complications”
• Table 2: “Mean” values have limited meaning and they should be removed. The time interval between the operation and the re-intervention should be added to a separate column. A new column with the medial values of the size of the grafts used could be added, if the data are available.
• Table 3: This refers to “surgical indications” and no “complications” (wrong title). It is very difficult to follow and the cumulative “incidence” has no value. The indications can be summarised in the text and the table omitted altogether.
• Table 4: It is difficult to distinguish between the severities of the postoperative regurgitation. The vertical columns should be better defined. If there was not any postoperative assessment of the regurgitation the space should be left blank. A new column should be added highlighting the time interval between the operation and the echocardiographic assessment (intra-operatively, 30 day, 6 months, 1 year,…). Addition to “total” is irrelevant and it should be omitted.
• The timing of the echocardiographic assessment is important and if it can be
extracted from the papers it would be interesting to present it in the text and also discuss it, if appropriate.

- The title of “conclusions” should be changed to “discussion” and a final robust “conclusion” should be added.
- The “discussion”:
  - The paragraph starting “Complications were also commoner in double outlet….” needs revising. If there are more complications in this group the type of complications should be addressed in results and discussed later with more appropriate referencing to the literature.
  - Consider expanding to discuss alternative surgical options for RVOT reconstruction like: Ross procedure and autologus non-valve reconstruction of the RVOT.
  - Potential late complications (like stenosis at the level of the anastomosis) and their possible options for treatment (like balloon dilatation) should be discussed.
  - If there are changes in the surgical practice among surgeons (i.e. Meyns), and especially if these series are included into the analysis and involving large number of cases, the rational behind the change should be discussed rather than just referenced.
  - If the authors would like to address the issue of usage of ASA for prevention of graft thrombosis and stenosis, they should discuss the suggested pharmacodynamics and evidence behind the usage of such a medication for this purpose.
- Certain papers should be reviewed and possibly referenced.
  - Chiappini B. et al, ATS; Volume 83, Issue 1, January 2007, Pages 185-187
  - Sekarski N. et al, ATS; Volume 84, Issue 2, August 2007, Pages 599-605
- As the paper reviews the literature for early and med-term result following RVOT reconstruction with Contegra conduit the title could be changed to something more appropriate like: “Contegra conduit for reconstruction of the right ventricular outflow tract: a review of published early and med-term results”
- Attention to the way papers are discussed is required. Wording like “crippling omission” should be revised.
- Personal recommendations like “Anyway, close echocardiographic follow-up is recommended” and arguments like “One might argue” should be avoided.

Discretionary revisions

- Terminology issues regarding “pressure differences” are not relevant to this paper and could been omitted.
- Referencing studies on the “Tables”: authors name may be more appropriate to the “reference number” of the manuscript.

**Level of interest:** An article of importance in its field
Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.