



Review

Systematic review and meta-analysis of the repair of potentially contaminated and contaminated abdominal wall defects

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Abdominal wall defect;
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Abstract

BACKGROUND: Repair of contaminated abdominal wall defects entails the dilemma of choosing between synthetic material, with its presumed risk of surgical site complications, and biologic material, a costly alternative with questionable durability.

DATA SOURCES: Thirty-two studies published between January 1990 and June 2015 on repair of (potentially) contaminated hernias with ≥ 25 patients were reviewed. Fifteen studies solely described hernia repair with biologic mesh, 6 nonabsorbable synthetic meshes, and 11 described various techniques. Surgical site complications and hernia recurrence rates were evaluated per degree of contamination and mesh type by calculating pooled proportions.

CONCLUSIONS: Analysis showed no benefit of biologic over synthetic mesh for repair of potentially contaminated hernias with comparable surgical site complication rates and a hernia recurrence rate of 9% for biologic and 9% for synthetic repair. Biologic mesh repair of contaminated defects showed considerable higher rates of surgical site complications and a hernia recurrence rate of 30%. As only 1 study on synthetic repair of contaminated hernias was available, surgical decision making in the approach of contaminated abdominal wall defects is hampered.

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A defect or hernia of the abdominal wall is a frequently encountered surgical problem, with approximately 10,000 incisional hernia repairs being performed in the United Kingdom each year.¹

It is currently accepted that only very small hernias are eligible for simple suture repair, whereas all others should preferably undergo mesh repair to reduce recurrence rates.² Potential or certain contamination of the surgical wound, however, poses a dilemma as the use of nonabsorbable synthetic material is historically considered contraindicated given the risk of postoperative infectious complications and need for mesh removal. The introduction of biologic meshes has provided an alternative. Derived from biologic material, these meshes theoretically incorporate into native tissue and possess the ability to resist infection.

Multiple reports on the use of biologic mesh in abdominal wall repair have been made. The Ventral Hernia Working Group (VHWG) has recommended its use for the

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The authors declare no conflicts of interest.

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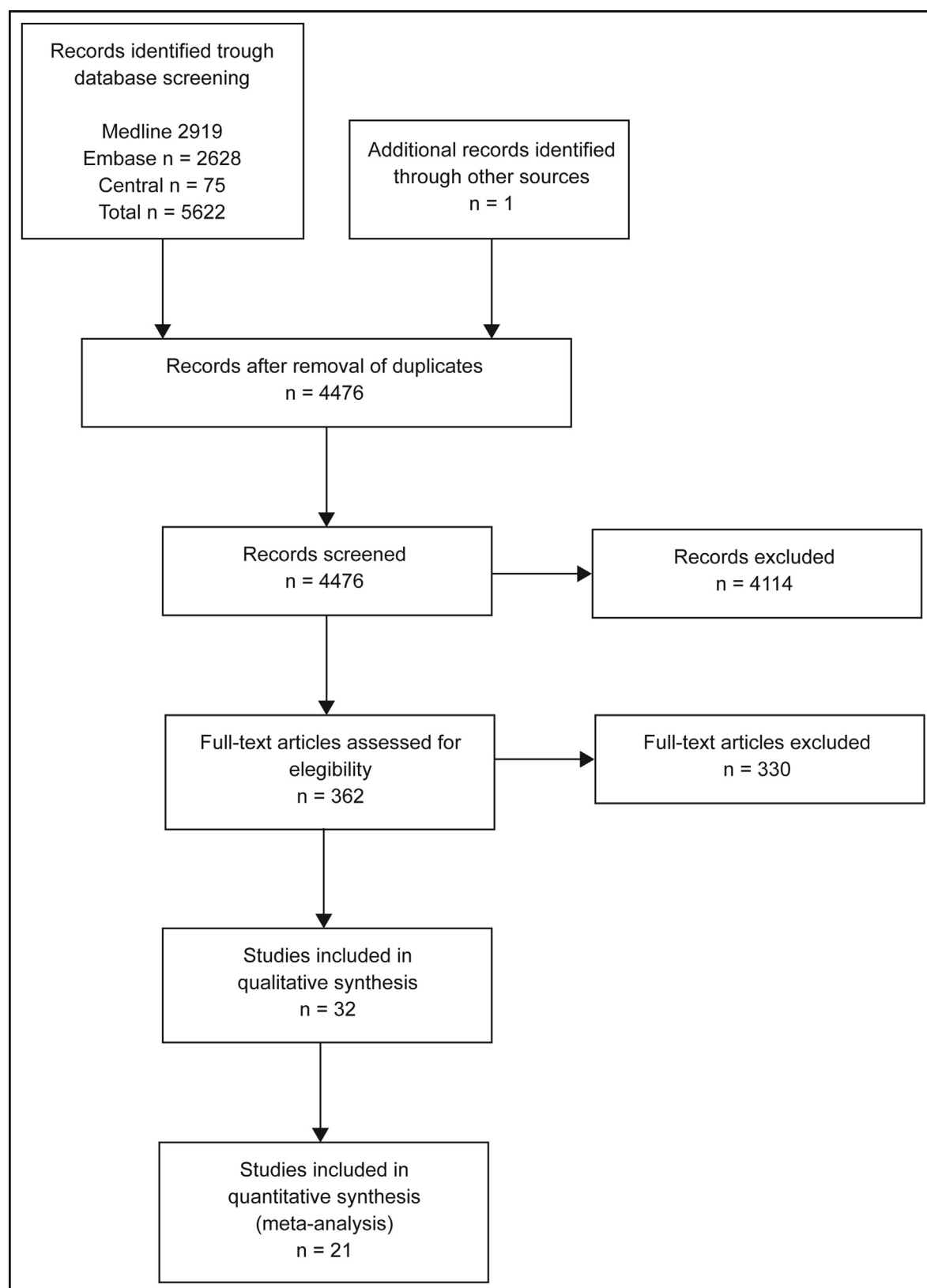


Figure 1 Flow diagram depicting search and study selection.

repair of potentially contaminated and contaminated hernias in 2010.³ Furthermore, a potential advantage of biologic over synthetic material was even suggested for

patients at high risk of developing surgical site complications. More recently, however, enthusiasm for biologic mesh in abdominal wall repair has somewhat dampened.^{4,5}

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