Whipple Procedure for Ductal Adenocarcinoma
Not Futile
Background

- Approx 30,000 people per year die of Pancreatic ductal adenocarcinoma
- Fourth most common cause of cancer death (in adults) representing roughly 5% of deaths
Pancreaticoduodenectomy described in 1898 by Dr. Codivilla and by Kaush in 1912. Whipple procedure named for Dr. Allen Whipple - devised the procedure in 1935 and later improved the technique. Dr. Whipple performed 37 pancreaticoduodenectomies in his career.
Main Entry: fu·tile

Pronunciation: \\fyü-təl, fyü-ti(ə)l\

Function: adjective

Etymology: Middle French or Latin; Middle French, from Latin *futilis* brittle, pointless, probably from *fu-* (akin to *fundere* to pour) — more at found

Date: circa 1555

1: serving no useful purpose : completely ineffective *<Dr. Lackey’s efforts at poker are futile>*

2: occupied with trifles : frivolous

— fu·tile·ly \\-təl(-l)i, -təl(-ə)l-ī\ adverb

— fu·tile·ness \\-təl-nəs, -təl(-ə)l-nəs\ noun

Adapted from Merriam-Webster Online Dictionary
Studies

- Retrospective review of 194 patients with ductal adenocarcinoma receiving Whipple
- Curative resection (R0) was significantly related to a favorable prognosis (p < 0.0001)
- Cumulative survival for curative resection: 5-year survival rate of 25.4%, a 7-year survival rate of 12.3%, and a 10-year survival rate of 8.2%
- Concluded Whipple is “as good as it gets” (ie. No survival benefit with other techniques)

Studies

48 patients with pylorus-preserving pancreatoduodenectomy (PPPD) vs 61 patients with Whipple procedure for ductal adenocarcinoma

PPPD survival: 3-year survival rate was 20.8%, and the 5-year survival rate was 16.7%

PPPD NOT performed on patients with direct invasion to the duodenal bulb or pyloric ring or perigastric lymph node metastasis

Also showed NO survival difference between PPPD and Whipple

Studies

- 12 patients with pylorus sparing procedure, 9 patients with Whipple procedure
- Significant increase in days of NG decompression and days to liquid diet for pylorus sparing procedure
- NO difference in morbidity, mortality, OR time or blood loss

Studies

- Whipple procedure in 282 patients
- Pylorus preserving in 186 patients
- Total pancreatectomy in 21 patients, distal pancreatectomy in 39 patients
- No difference in morbidity or mortality between Whipple and pylorus preserving

Meta-analysis

- 490 patients in 6 studies
- 244 with Whipple procedure, 246 with Pylorus sparing procedure
- Pylorus sparing procedure 72 minutes faster ($P < 0.001$) with 0.66 fewer units of transfused blood ($P = 0.002$)
- NO difference in hospital stay, biliary leak, pancreatic leak, gastric leak, or long term mortality
- Trend toward better gastric emptying and shorter NG tube use in Whipple procedure
- Conclusion- Large well designed study(s) needed to assess differences

Meta-analysis

- Meta-analysis included 6 RCTs and screened 1235 abstracts
- 465 patients (236 Whipple, 229 Pylorus preserving)
- Revealed statistically significant decrease in operative time with pylorus preserving (30 to 105 minutes P=0.0004)

Meta-analysis

- NO change in morbidity (47.6% pylorus preserving, 52.2% Whipple, P=0.69)
- NO change in mortality (P=0.18)
- NO change in hospital stay (P=0.62)
- NO difference in biliary leak (P=0.82)
- NO difference in fistula rate (P=0.63)
- Trend toward decreased delayed gastric emptying in Whipple (29.0% vs. 24.4%)

Meta-analysis

- 4 of 6 without power calculations (likely underpowered)
- 1 of 6 used intent to treat
- No analysis of neoadjuvant therapy on results
- 2 of 6 had blinded outcome assessor

Conclusion – Need for high powered study with universal endpoint definitions

Studies in Meta-analysis

- Trend to higher tumor positive resections with pylorus sparing (19 vs 12 patients), excluded all patients with positive peripyloric lymph nodes, or direct invasion of stomach/pylorus.
- Randomization occurred AFTER determining ability to treat
- 2 patients were converted to standard Whipple intraoperatively
- >20% of patients lost to follow up

Studies in Meta-analysis

- 3 patients converted to Whipple from pylorus preserving procedure
- Shorter OR time by 30 minutes
- No difference in leak rate or mortality
- Significant difference in delayed gastric emptying (P < 0.05), improved with Whipple

Lin. Hepatogastroenterology 2005; 52:1601–4
11 patients converted to Whipple from pylorus sparing, and were excluded from the study.

No data available on excluded patients, per author.

>20% of patients lost to follow up.
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