

RIGHT HEMICOLECTOMY FOR ACUTE APPENDICITIS SECONDARY TO BREAST CANCER METASTASESSingapore Med J 2018; 59(5): 284-285 <https://doi.org/10.11622/smedj.2018061>

Dear Sir,

Breast cancer metastases causing acute appendicitis are exceedingly rare, with only 14 reported cases,^(1,2) for which the majority of the patients underwent appendectomy and only 3 (21.4%) cases underwent right hemicolectomy. Knowledge of this phenomenon is important because while surgical appendectomy is a straightforward operation, a complicated mass with suspicious nodes may present occasionally and require a more extensive operation.

A 59-year-old domestic helper presented with sudden-onset right iliac fossa pain of two days' duration. On examination, her right iliac fossa was tender. Her total white cell count was $8 \times 10^9/L$. Computed tomography (CT) of the abdomen was performed in view of the high incidence of right-sided diverticulitis in the local community.⁽³⁾ It showed a 4.3 cm \times 1.2 cm rim-enhancing collection adjacent to the tip of an inflamed appendix with periappendiceal fat stranding, prominent ileocolic nodes and caecal wall thickening. A diagnosis of perforated appendicitis was made and laparoscopic appendectomy was planned.

The patient also complained of a left breast lump that was getting larger. It had been evaluated two years before and classified as a suspicious (Breast Imaging Reporting and Data System score of 4) solid cystic lump with microcalcifications. She had been scheduled for histological correlation but subsequently defaulted on follow-up. On examination then, two lumps were present at the upper outer quadrant, measuring 4 cm and 5 cm, with palpable axillary lymph nodes. She had a family history of breast cancer, reached menarche at 14 years of age and had three children before 30 years of age, all of whom were breastfed for more than six months. Intraoperatively, we found a hard appendiceal mass, whose tip was adherent to the terminal ileum, and lymph nodes at the root of the mesentery. An open right hemicolectomy was performed. She recovered well and was discharged on postoperative Day 6.

Triple assessment of the breasts showed invasive ductal carcinoma with metastasis to the lymph nodes; it was found to be oestrogen receptor (ER) negative, progesterone receptor (PR) positive (weak) and human epidermal growth factor receptor 2 (HER2) positive. Pathological examination of the right hemicolectomy specimen showed a poorly differentiated adenocarcinoma involving the proximal appendix, with periappendicular abscess formation. Lymphovascular invasion was present. Five out of 18 lymph nodes had metastatic carcinoma. Neuroendocrine markers were negative. ER, PR and HER2 receptor status mirrored that of the breast carcinoma. Further workup with CT of the thorax did not locate any other sites of metastases. A final diagnosis of metastatic breast carcinoma causing acute appendicitis was established. Her case was discussed at a multidisciplinary tumour board meeting and surgical resection of the breast tumour, followed by chemotherapy and/or targeted therapy, was recommended. In view of financial reasons, she decided to return home to the Philippines for further treatment.

In a series of 7,970 appendectomies, Connor et al⁽¹⁾ found that the incidence of metastasis to the appendix was 0.14%. To date, there have only been 14 reported cases (Table I) of breast metastasis to the appendix, which usually presents as acute appendicitis.⁽²⁾ Right hemicolectomy for primary adenocarcinoma of the appendix, even as a secondary procedure, has shown a survival advantage.⁽⁴⁾ Unfortunately, it is difficult to determine if this procedure provides a similar survival advantage for secondary metastases to the appendix, as there is insufficient data.

Finally, studies have previously shown that invasive lobular carcinoma is more likely to metastasise to the gastrointestinal tract than invasive ductal carcinoma.⁽⁵⁾ This pattern is indeed evident in the series of 14 cases reported, with 4 (33%) out of 12 cases (after excluding cases with unknown types of breast cancer) having lobular pathology, higher than the usual incidence of lobular carcinoma (8%–14%).⁽⁶⁾

Table I. Case series of breast metastasis to appendix, as reported in the existing medical literature.

No.	Author, yr of study, location	Age (yr)	BC-AA interval (yr)	Metastasis (sites)	Perforation	Op	Histology	HR status
1	Oldfield, 1946, Leeds, UK ⁽⁷⁾	40	3	Nil	Yes	A	Ductal	Nil
2	Capper and Cheek, 1956, Texas, USA ⁽⁸⁾	36	1	Yes (ovaries)	Nil	A	Ductal	Nil
3	Latchis and Canter, 1966, Washington DC, USA ⁽⁹⁾	45	6	Yes (chest wall, lungs)	Nil	A	Ductal and lobular	Nil
4	Burney et al, 1974, Connecticut, USA ⁽¹⁰⁾	35	1.3	Yes (brain, liver)	Yes	A	Nil	Nil
5	Burney et al, 1974, Connecticut, USA ⁽¹⁰⁾	73	3	Yes (bone, peritoneal)	Yes	A	Nil	Nil
6	Solis et al, 1986, New York, USA ⁽¹¹⁾	60	5	Nil	No	A	Ductal	Nil

(Contd...)

Table I. (Contd...)

No.	Author, yr of study, location	Age (yr)	BC-AA interval (yr)	Metastasis (sites)	Perforation	Op	Histology	HR status
7	Halliday, 1987, London, UK ⁽¹²⁾	57	0	Nil	No	RH	Poorly differentiated adenocarcinoma	Nil
8	Maddox, 1990, Cardiff, UK ⁽¹³⁾	65	5	Yes	No	RH	Ductal	Nil
9	Phillippart et al, 2000, Brussels, Belgium ⁽¹⁴⁾	37	Nil	Nil	Yes	A	Ductal and lobular	Nil
10	Phillippart et al, 2000, Brussels, Belgium ⁽¹⁴⁾	75	Nil	Nil	No	RH	Ductal and lobular	Nil
11	Varga et al, 2005, Nyíregyháza, Hungary ⁽¹⁵⁾	45	Nil	Nil	Yes	A	Ductal	Article in Hungarian
12	Pigolkin et al, 2008, Russia ⁽¹⁶⁾	60	1.5	Nil	Nil	Article in Russian	Nil	Moderate expression of ER and PR
13	Dirksen et al, 2010, Pennsylvania, USA ⁽¹⁷⁾	76	Nil	Nil	Yes	A	Lobular	ER+, PR- and HER2-
14	Tahara et al, 2015, Boston, USA ⁽²⁾	39	6	Yes (chest wall, peritoneal)	No	A	Ductal	ER+, PR+ and HER2+
15	Present study	59	2	Nil	Yes	RH	Ductal	ER-, PR+ and HER2+

Median age is 51 years and interval duration between breast cancer (BC) and acute appendicitis (AA) is 3 years. A: appendicectomy; ER: oestrogen receptor; HR: hormone receptor; Op: operation; PR: progesterone receptor; RH: right hemicolectomy

Yours sincerely,

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