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Costs of prophylactic resection

In a recent commentary, Steve Morgan and colleagues[1] assess the long-term financial consequences of predictive genetic testing with respect to subsequent diagnostic and preventive services. As they note, prophylactic surgical removal of apparently healthy tissue is one option for prevention of some diseases. Although it has been assumed that such resected tissues are healthy, they may in fact harbour significant histopathologic abnormalities. Histopathologic studies of specimens removed prophylactically from 3 sites (stomach, ovary and colon) illustrate this phenomenon.

Pathologic study identified superficial infiltrates of malignant signet ring cells in 5 of 5 gastrectomy specimens from patients who harboured a germline truncating mutation in the epithelial cadherin (E-cadherin or CDH1) gene.[2] These malignant cells escaped detection by routine pathologic examination, which usually consists of 10 to 15 histopathologic sections, and were detected only through exhaustive histologic sectioning with a minimum of more than 150 sections. Similarly, occult carcinoma of the ovary or fallopian tube was identified in 5 (13%) of 39 prophylactic salpingo-oophorectomy specimens from patients who were positive for germline BRCA.[3] Finally, colectomy specimens from patients with familial risks of colonic cancer may harbour subtle neoplastic changes. In the normal population, 95% of precancerous lesions and early cancers are polypoid in nature, whereas in hereditary nonpolyposis colon cancer these lesions are flat in 50% of cases ("flat adenomas")[4] and can be very difficult to detect. Flat adenomas and cancers are also characteristic of some variants of familial adenomatous polyposis.[5]

The natural history and clinical significance of occult carcinomas from various anatomic sites are not entirely known. Depending on the site, the pathologic detection of an occult carcinoma may alter or determine postoperative adjuvant therapy, follow-up regimens or patient counselling.

In conclusion, surgical pathologic examination of prophylactically removed specimens may reveal occult or minimal lesions. Consequently, such examination must be included as an outcome measure in the implementation of predictive genetic testing programs. In addition, the detection of these small or occult lesions often requires intensive effort. The impact of this effort on work in the surgical pathology laboratory has received scant attention in the predictive genetic testing literature,[6,7] although pathologists are warily anticipating an increase in prophylactic surgery.[8]

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Corrections

In a recently published paper by Louise Séguin and colleagues,[1] the second sentence of the Methods section should read as follows: "For our analyses we used cross-sectional data from the 1998 phase of the Quebec Longitudinal Study of Child Development[54] (QLSCD, conducted by Santé Québec, a division of the Institut de la statistique du Québec) for a sample of 2223 infants whose mean age was 5 months (range 15–36 weeks), corrected for gestational age, at the time of the interview."

Reference
1. Séguin L, Xu Q, Potvin L, Zunzunegui M-V, Frohlich KL. Effects of low income on infant health. *CMAJ* 2003;168(12):1533-8.

In figure 2 of the review article on antiphospholipid syndrome,[1] the word "serum" in all occurences should be replaced with the word "plasma."

Reference
1. Hanly JG. Antiphospholipid syndrome: an overview. *CMAJ* 2003;168(13):1675-82.