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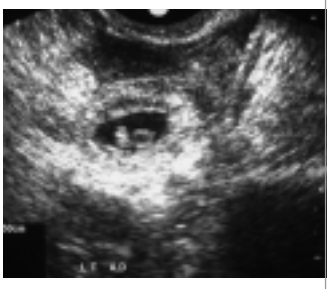

Cover Picture:
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(Refer to pages 295-298)

E d i t o r i a l

Pap smear screening for cervical cancer in Singapore: issues to consider

E H Tay

Although its incidence has been declining gently over the last three decades, cervical cancer is still the most prevalent female genital tract cancer in Singapore, with an age-standardised rate of 14.2 per 100,000 women per year recorded for the period 1993-1997[1]. This is about twice that of the Nordic countries and the white population of America. Papanicolaou (Pap) smear screening has been effective in reducing mortality from cervical cancer in countries that run a comprehensive programme[2]. It is feasible wherever cervical screening is appropriate and should be implemented in communities with access to curative treatment services. A population cervical cancer screening programme will be implemented for Singapore in the very near future. This will be a relatively costly and labour-intensive exercise for the country, but promises to reduce the incidence and mortality of a largely preventable cancer.

However, the Pap test is by no means a perfect test and its major drawback[3] is a false- negative result. False- negative rates continue to be reported, even recently[4]. The causes of false negative results include improper sampling, preparation errors and laboratory misinterpretations. The medicolegal repercussions of a proven false- negative test can be very costly and has been the cause of extensive efforts[5] to reduce this inherent deficiency of the Pap test. Adjunctive mechanisms used to enhance Pap testing include: automated slide-handling systems, computerised microscope, automated Pap smear screening, computer-assisted re-screening of conventionally- negative Pap smears, and monolayer preparation of cervical smears[5]. In addition, non-cytological methods, such as cervicography and microelectrical detection of biophysical changes of the cervical tissues[6], have been studied. But such adjunctive mechanisms increase the cost of screening significantly, and have not convinced all governmental agencies to employ them[7].

The confirmation of the central aetiologic role of genital human papilloma virus (HPV) in cervical carcinogenesis[8,9] led clinicians to use HPV testing as an adjunctive test to the Pap test[10,11] and investigators to explore its role as a primary screening method. Recently, preliminary data on a proof-of-principle study[12] of a monovalent HPV vaccine has confirmed a high rate of seroconversion. It also showed that none of the 768 women in the HPV vaccine arm developed HPV-16 infection or HPV-16 cervical intra-epithelial neoplasia (CIN). But 41 of the 765 women in the placebo arm acquired HPV-16 infection and 9 developed HPV-16 CIN. More studies on HPV vaccines are underway, with the anticipated perceived potential of eradicating a large proportion of the cervical cancer incidence in the latter part of this century.

However, successful prophylactic cervical cancer vaccines may not eliminate the requirement for a screening program, and the feasibility of

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HPV testing has not been demonstrated in the setting of a low-resource, developing country. Pap testing will continue to be a relevant screening tool for the near future. The factors critical to having a successful Pap smear screening program include achieving a wide coverage of women screened in the community, the sensitivity and specificity of the Pap test and the prompt effective management of pre-cancerous cervical abnormalities detected through screening.

Past failures of cervical screening attributable to failures in programmatic quality, rather than to technological limitations of the Pap test, has shifted our focus from new technology toward quality assurance. A retrospective review has highlighted problem areas for laboratory education and quality improvement efforts and strong liability concerns have prompted the need for laboratory regulation[13]. In fact, re-screening archival cytology cases previously- diagnosed as within normal limits or benign cellular changes for current cases diagnosed as low-grade squamous intraepithelial lesion or squamous intraepithelial lesion of indeterminate grade will identify screening and diagnostic error[14]. The majority of cases identified are reclassified in the category of atypical squamous cells of undetermined significance. Cases of identified high-grade squamous intraepithelial lesion are identified as a minority of cases in virtually all laboratories surveyed[15].

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Indeed, the pathology laboratories play a pivotal role in the context of a cervical cancer screening program. In the current issue of the Singapore Medical Journal, the author of the article "The pivotal role of the pathology laboratory in the context of a Singapore cervical cancer screening programme" has provided a timely review of the potential issues inherent to a screening program using the conventional Pap test. In particular, Chang has highlighted several salient areas that may be consolidated as follows[16]:

1) There is a need for constant exchange of information between the reporting pathologists and the clinicians. This two-way feedback on the quality of Pap smears obtained and the necessary clinical data may increase the sensitivity and reliability of laboratory interpretation of the Pap test. Pathologists may constantly update their clinician counterparts on current cytological classification and interpretations of Pap smears, while learning from them the current treatment strategies based on histopathological factors. Meticulous clinical and pathological correlation is essential for the prescription of optimal treatment of cervical cancer, especially in young women with microscopic invasive diseases. Compulsory continual integrated mutual professional development on a regular basis may provide the necessary platform to achieving this goal.
2) The need for governmental regulation of laboratories regarding the registration of medical laboratory technologists, the maximum number of slides to be screened by a single screener per day, the obligatory implementation of internal quality assurance mechanism in laboratories reportable to the relevant authorities and the obligatory accreditation of laboratories, are all very relevant issues to consider. Departments of pathology have embraced the concept of accreditation and there has been strong support from professional bodies, specialist societies, health service managers, the independent sector and government departments[17].
3) Pathology laboratories need to relentlessly explore new technologies and methodologies in cervical cancer screening to ensure that our

local cervical cancer screening program will yield the best results for the country, while always considering their cost-effectiveness. The governmental authority will need to provide the necessary platform, the service of relevant professionals and administrative assistance to evaluate such new initiatives effectively.

While the implementation of a national cervical cancer screening program brings about the excitement of the prospect of controlling a largely preventable cancer, the country stands at the threshold of heralding the costly process of preventing a misdiagnosis due to the less than perfect sensitivity and specificity of the screening Pap test. Just like the countries that have benefited from a successful Pap smear screening program, we must likewise be prepared to undertake the accompanying issues that will definitely follow. SMJ

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