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EDITORIAL

Oral Cancer—Curse, Cure and Challenge

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Oral cancer is mostly a man-made disease associated with tobacco since centuries. In early part of the seventeenth century, few original documents do suggest large tumour masses in the oral cavity following tobacco ingestion, initially used to be taken as medicine for some oral ailments. Among the epidemiological factor causing oral cancer, tobacco is the most important culprit along with alcohol. Both together are responsible for 40 % of cancer and 60 % of cancer-related death all over the world. Oral cancer is the 8th most common cancer in USA, 13th in UK and 1st or 2nd in most of South and South East Asia. It forms 2 % of all cancer in Western countries but accounts for 30–40 % in Indian and neighbouring countries. China consumes 39 % of tobacco followed by 5 to 8 % in the USA and 3 % in India in various forms. In China and in the West, smoking and alcohol are the important causes of oral cancer, but in South Asia, it is oral tobacco [1, 2].

Male and female ratio is 1.7 to 1.0 in most of the countries. The mean age is 45 years in the West with peak at 60–69 years [2]. In India, the mean age is 36 years and peak at 55–60 years. It is a disaster to learn that 10 to 20 % of high school students in USA do take tobacco orally in various forms occasionally or regularly and get oral cancer in 4 % of this population. This is true for most of the Western countries. In South Asia, the figure is still high, 30–40 % in 15 to 30 years age group, with 40–50 % developing oral cancer and 42 % of all deaths due to tobacco-related diseases. In USA, 6.5–8 per 100,000, France 8–9 per 100,000 and India 20 per 100,000 get oral cancer. In China, 1.2 million deaths were due to tobacco-related disorder including oral cancer annually [3, 4].

Few important statistics are eye opener.

The tobacco industry profit is $35 billion at the cost of six million deaths. In India, tobacco-related products industry for oral consumption is more than Rs. 1,000 crore with profit of 50 % at the cost of 1.6 lacs to 2 lacs reported deaths, while those unreported are much more. In USA, cigarettes are sold worth $71 billion/year and responsible for an estimated $193 billion in its health-related expenditure. One cane of Marlboro cigarette ($12/20 sticks) can purchase 29 cans of rice to feed eight people, and part of its sale can save millions of life from hunger deaths. If proper steps are not taken, there will be 300,000 cases/year in the USA by 2020, and 15 million new cases every year in the world, of which two out of three in developing countries with poor survival. The risk factor is 0.86 % in man/women born today in their life time [4]. In USA, 80 % of oral cancers are diagnosed in early stage but 5 years survival is 60 %, while in Indian and South East Asia countries, late diagnosis (III and IV stages) is more than 70 %, with 5 years survival of 35 %, in Arab countries 5 years survival is 32 %. Overall survival in young age group of patients is still low. Low socioeconomic group patients form a large percentage of the group and found to be of genetic P53 dissociation and still poor survival. The last three decades has seen improved management and total care system all over the world but total survival rate is not much improved.

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Precarcinoma Conditions and Carcinogens

There are many known conditions like sun exposures with lip lesions, cigar smoking with local marks over lip, marijuana smoking, snuff tobacco and betal quid (paan) giving rise to local stomatitis or submucous fibrosis, gradually leading to cancer [4, 5].

Low intake of fruits and vegetables, poor oral hygiene with bacterial infection of the gums and teeth, harbour of HPV virus, lichen planus, leukoplakia, erythroplasia, nicotine stomatitis and keratosis are common precancerous condition and need proper evaluation and care. Immunosuppressed patients are likely to develop oral cancer twice more than a normal population and need proper advice.

Tobacco-specific nitrosamines are a group of carcinogens —NHK and NHH—causing oral cancer in animal model. Oncoproteins like RB and D-type cyclin expression are active in G1 regulation in oral cancer. This also leads in few oncoproteins reversing the process in G1 cycle. Human papilloma virus found in large cases of oral cancer, where tobacco is not a cofactor, plays active role at genetic level and needs further evaluation and study, not only for prevention but from treatment point of view also. Many such studies are ongoing and related to gene expression, tumour suppression, transcription factor, xenobiotics, enzymes, metastatic proteins, etc. and giving hope for better management in the future.

Management Guideline and Its Application

Surgery remains the mainstay for oral cancer except for few sites (post-tongue, nasopharynx). The extent of surgery depends on the primary site, location, size, proximity to bone and depth of infiltration. These factors guide to bone saving, extent of wide excision to radical surgery and reconstruction. There is no compromise on the extent of surgery as per factor guiding for cure. Defects are left to be reconstructed by myocutaneous or free flaps with far improved result/survival. Better understanding of molecular biology and local progression, early detection and proper nodal management with adjuvant chemo, radiation or its combination, lead to multimodality, coordinated efforts to give high survival and better life [3, 6].

The above guideline is to be applied judiciously after assessing clinically, radiologically and histopathologically to stage and grade it in relation to other existing conditions and plan it carefully. Once a plan is framed, execute it with the help of other colleagues, chemotherapist and radiotherapist, to get the best of results and better survival with livable life. General surgeons should understand their limitations and get experience, associated with trained group of specialist and develop skills for correct independent decisions, and take help of other onco specialists if necessary.

Oral Cancer Awareness Programme

The American Cancer Society report of March 2012 shows the magnitude of the problem with six million (20 % cancer, 12 % oral cancer) deaths due to tobacco-related diseases, which is likely to be one billion by the end of twenty-first century, one person death every 6 s. No national health programme in any country can check the incidence of oral cancer till an active participation by social organisations, religious institutions, political parties, medical association of all specialities and government organisations come together with a pledge to enact programme with dedication. A large-scale awareness programme involving educational institution, media, entertainment houses and strict law to enforce ban on tobacco production and sale will check the problem in years to come [1, 4, 5].

WHO in a global treaty endorsed by more than 174 countries gave a clear mandate for public awareness programme and ban of tobacco sale. Revenue involved is so high that no country has banned this legally. In India, six states have legally banned tobacco-related gutka pouch sale. How it is effective, time will show. A programme that has been charted to guide nations to protect their citizen is named as M POWER, M—monitor, P—protect, O—offer help to quit, W—warn of danger, E—enforce ban on adds, promotion and sponsorship and R—raise taxes. This needs national conscientious and political will. Young generation is bright and focused to make a composite effort for thoughtful awareness programme and early detection to keep population away from tobacco evil and treatment at an early stage [1, 4].

Surveillance, Epidemiology and End Result

The programme of the National Cancer Institute USA framed a programme aimed at mass education, public awareness regarding tobacco ill effects and other epidemiological factor and proper management guidance to get expected end result. Programmes are made to work but expected results still elude and need evaluation. The last 30-year study (1975–2007) has shown no improvement in end result [4].

Doctors Responsibility

No law, no national programme and no efforts through any organisation including government departments and its related agencies can be successful in public awareness and early detection without the involvement of doctors and paramedical staff. Everyone needs medical help few times a year for various problems and has to go through a medical system involving doctors and paramedical staff. Programmes for

breast cancer, AIDS, tuberculosis, Pap smear for cancer of the cervix and PSA for prostate cancer are successful. Similarly, early detection programme like oral examination and finger palpation, and brush cytology/biopsy involving general practitioners, dentists, physician, surgeons and paramedical staff in clinics/camps and educational institution will save the population specially youth from tobacco disaster.

Charts and pamphlets for oral cancer and tobacco in all the hospitals including primary health centres, government offices, and prominent places in towns and cities will boost awareness programme. We as surgeons do examine patients for various problems and need to examine oral cavity irrespective of disease will help such programme and save millions of lives.

Can oral cancer have a theme mark like pink ribbon (breast cancer) which can be displayed at important places in towns and cities, hospitals and clinics to make people aware of the oral cancer and early diagnosis? Self-examination by the public himself, particularly in high risk group, will prove the most beneficial awareness programme to detect early oral cancer. The efforts towards this direction jointly by government and the public will improve the nation's health.

Future

Clear understanding of oral cancer cell biology has developed laser capture microdissection, comparative genome hybridizations and micro protein chips, and few more ionic procedures to give a cure with minimal morbidity and better results, though in early stages. Pharmacological-targeted treatment with advance radiation techniques have changed the scenario in late stages also with or without surgery and improved survival. Improved technology cannot replace basic approach of awareness programme and consorted efforts of the governments and public together. The theme mark like "two green leaves" suggesting-make life bright by oral self-examination, or any other theme, which attracts attention with a message, endorsed by doctors, public leaders, sports person, TV movie stars and educationists will definitely help in controlling national menace.

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