Cancer Association of South Africa (CANSA)

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Fact Sheet on Paranasal Sinus and Nasal Cavity Cancer

Introduction

The word "paranasal" means near the nose. The paranasal sinuses are hollow, air-filled spaces in the bones around the nose. The sinuses are lined with cells that make mucus, which keeps the inside of the nose from drying out during breathing.

[Picture Credit: Nasal Cancer]

The space inside the nose is called the nasal cavity. This space warms, moistens and filters air as one breathes in air. The bones around the nasal cavity have small hollow spaces in them called paranasal sinuses.

The nose opens into the nasal cavity, which is divided into two nasal passages. Air moves through these passages during breathing. The nasal cavity lies above the bone that forms the roof of the mouth and curves down at the back to join the throat. The area just inside the nostrils is called the nasal vestibule.

Paranasal Sinus and Nasal Cavity Cancer

Cancer of the paranasal sinus and nasal cavity forms part of head and neck cancers.

The most common type of paranasal sinus and nasal cavity cancer is squamous cell carcinoma. This type of cancer forms in the squamous cells (thin, flat cells) lining the inside of the paranasal sinuses and the nasal cavity.

Other types of paranasal sinus and nasal cavity cancer include the following:

- Melanoma: Cancer that starts in cells called melanocytes, the cells that give skin its natural colour.
- Sarcoma: Cancer that starts in muscle or connective tissue.
- Inverting papilloma: benign tumours that form inside the nose. A small number of these change into cancer.
- Midline granulomas: cancer of tissues in the middle part of the face.

Researched and Authored by Prof Michael C Herbst
[D Litt et Phil (Health Studies); D N Ed; M Art et Scien; B A Cur; Dip Occupational Health; Dip Genetic Counselling; Diagnostic Radiographer; Dip Audiometry and Noise Measurement; Medical Ethicist]
Approved by Ms Elize Joubert, Chief Executive Officer [BA Social Work (cum laude); MA Social Work]

Dale, O.T., Pring, M., Davies, A., Leary, S., Ingarfield, K., Toms, S., Waterboer, T., Pawlita, M., Ness, A.R. & Thomas, S.J. 2019.

Objectives: This paper aims to provide contemporary epidemiological data on squamous cell carcinoma (SCC) of the nasal cavity, which represents a rare type of head and neck cancer.

Design, setting & participants: A descriptive analysis of people with nasal cavity SCC treated with curative intent from the Head and Neck 5000 study; a multicentre clinical cohort study of people from the UK with head and neck cancer. People with tumours of the nasopharynx, paranasal sinuses and other sub-sites of the head and neck were excluded.

Main outcome measures: Demographic data and treatment details are presented for all participants. The main outcomes were overall survival and survival according to categories of characteristics (eg, smoker vs non-smoker); these were explored using Kaplan-Meier plots.

Results: Thirty people with nasal cavity SCC were included in the study, of which most were male (67%) and current or ex-smokers (70%). The majority (70%) presented with early-stage (T1/2, N0) tumours. Cervical lymph node metastases at presentation were rare, occurring in only one person. Nine people died during the follow-up period (30%). Worse survival outcomes were seen in people with moderate or severe co-morbidities.

Conclusions: This paper provides epidemiological data on nasal cavity SCC in the UK. Patterns of disease and survival outcomes are described, identifying high-risk groups. Further studies should explore whether primary treatment modality alters survival.

Incidence of Paranasal and Nasal Cavity Cancer

The National Cancer Registry (2014) does not provide information regarding Paranasal and Nasal Cavity Cancer. According to the National Cancer Registry (2014) the following number of cases of naso-oropharyngeal cancer was histologically diagnosed during 2014. Histologically diagnosed means that a sample of tissue (biopsy) was forwarded to an approved laboratory where a specially trained pathologist studied the specimen under a microscope and confirmed a diagnosis of cancer.

Group - Males 2014	Actual No of Cases	Estimated Lifetime Risk	Percentage of All Cancers
All males	304	1:519	0,83%
Asian males	18	1:323	1,97%
Black males	158	1:718	1,43%
Coloured males	50	1:269	1,19%
White males	78	1:367	0,38%

Group - Females 2014	Actual No of Cases	Estimated Lifetime Risk	Percentage of All Cancers
All females	107	1:2 085	0,28%
Asian females	4	1:1 456	0,35%
Black females	65	1:2 455	0,40%
Coloured females	10	1:2 142	0,25%
White females	28	1:1 378	0,17%

The frequency of histologically diagnosed cases of cancer of the naso-oropharyngeal cancer in South Africa for 2014 was as follows (National Cancer Registry, 2014):

Group - Males 2014	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All males	9	7	19	46	84	91	30	4
Asian males	0	0	1	3	4	4	3	1
Black males	7	5	14	26	34	46	11	2
Coloured males	1	1	1	6	17	15	6	0
White males	1	0	0	10	29	25	10	1

Group - Females 2014	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All females	3	7	11	17	30	13	18	5
Asian females	0	1	0	0	2	0	1	0
Black females	2	6	9	11	14	5	10	4
Coloured females	0	0	1	3	4	2	0	0
White females	1	0	1	3	8	6	7	1

N.B. In the event that the totals in any of the above tables do not tally, this may be the result of uncertainties as to the age, race or sex of the individual. The totals for 'all males' and 'all females' , however, always reflect the correct totals.

Causes and Risk Factors for Paranasal Sinus and Nasal Cavity Cancer

The exact causes of nasal and sinus cancers are not known. It is more common in people who handle or breathe in certain chemicals or dust for many years because of their work environment or as a result of serious hobbies. These include wood dust, chromium, nickel, formaldehyde, leather dust and mineral oils.

Other factors that may increase the risk of nasal and sinus cancer include:

- smoking tobacco
- an infection caused by the human papilloma virus (HPV).

Kim, H.J., Ahn, H.S., Kang, T., Bachert, C. & Song, W-J. 2019.

Background: Nasal polyps are a common condition with a significant effect on quality of life. The association between nasal polyps and future risk of head and neck cancer is unknown.

Objective: We sought to investigate the relative risk of nasal cavity and paranasal sinus (NCPS) and nasopharyngeal cancers in a nationwide, population-based, longitudinal retrospective cohort of patients with nasal polyps and matched comparators.

Methods: The 2005-2017 National Health Insurance claims and National Health Screening program databases were used to construct a cohort of patients with nasal polyps and matched comparators in Korea. The relative risk of NCPS and nasopharyngeal cancer in patients with nasal polyps was examined.

Results: The study consisted of 453,892 patients with nasal polyps and 4,583,938 matched comparators. The mean duration of follow-up was 6.2 years (range, 2-13 years). The incidence rate ratios of patients with nasal polyps compared with the comparators was 7.00 (95% CI, 5.28-9.25) for NCPS cancer and 1.78 (95% CI, 1.28-2.42) for nasopharyngeal cancer. Increased risks of these cancers were only evident in older subjects (age ≥50 years). There were trends toward weaker

associations of nasal polyps with these cancers in younger subjects with comorbid asthma or allergic rhinitis (<50 years).
Conclusion: Although the absolute cancer incidence is very low, the relative risk of NCPS or nasopharyngeal cancers was significantly greater in older patients with nasal polyps. Given the regional and pathologic heterogeneity of nasal polyps, further studies are needed to explore the underlying mechanisms and validate the relationships.

Screening for Nasopharyngeal Cancer
Screening for early-stage disease could lead to improved outcomes.

Yang, S., Wu, S., Zhou, J. & Chen, X.Y. 2015.
BACKGROUND: Nasopharyngeal cancer is endemic in a few well-defined populations. The prognosis for advanced nasopharyngeal cancer is poor, but early-stage disease is curable and a high survival rate can be achieved. Screening for early-stage disease could lead to improved outcomes. Epstein-Barr virus (EBV) serology and nasopharyngoscopy are most commonly used for screening. The efficacy and true benefit of screening remain uncertain due to potential selection, lead-time and length-time biases.
OBJECTIVES: To determine the effectiveness of screening of asymptomatic individuals by EBV serology and/or nasopharyngoscopy in reducing the mortality of nasopharyngeal cancer compared to no screening. To assess the impact of screening for nasopharyngeal cancer on incidence, survival, adverse effects, cost-effectiveness and quality of life.
SEARCH METHODS: The Cochrane Ear, Nose and Throat Disorders Group (CENTDG) Trials Search Co-ordinator searched the CENTDG Trials Register; Central Register of Controlled Trials (CENTRAL 2015, Issue 6); PubMed; EMBASE; CINAHL; Web of Science; Clinicaltrials.gov; ICTRP and additional sources for published and unpublished trials. The date of the search was 6 July 2015.
SELECTION CRITERIA: Randomised controlled trials (RCT) and controlled clinical trials (CCT) evaluating screening for nasopharyngeal cancer versus no screening. Randomisation either by clusters or individuals was acceptable.
DATA COLLECTION AND ANALYSIS: We used the standard methodological procedures expected by The Cochrane Collaboration. Our primary outcome measure was nasopharyngeal cancer-specific mortality. Secondary outcomes were incidence of nasopharyngeal cancer by stage and histopathological classification at diagnosis, survival (two-year, three-year, five-year and 10-year), harms of screening (physical and psychosocial), quality of life (via validated tools such as the SF-36 and patient satisfaction), cost-effectiveness and all-cause mortality.
MAIN RESULTS: We identified no trials that met the review inclusion criteria. We retrieved 31 full-text studies for further investigation following the search. However, none met the eligibility criteria for a RCT or CCT investigation on the efficacy of screening for nasopharyngeal cancer.
AUTHORS' CONCLUSIONS: No data from RCTs or CCTs are available to allow us to determine the efficacy of screening for nasopharyngeal cancer, or the cost-effectiveness and cost-benefit of a screening strategy. High-quality studies with long-term follow-up of mortality and cost-effectiveness are needed.

Signs and Symptoms of Paranasal Sinus and Nasal Cavity Cancer
In most cases, nasal and paranasal sinus cancers are found because of the symptoms they cause. Diagnosis in people without symptoms is rare and usually accidental (because of tests done to check

other medical problems). Individuals with nasal cavity or paranasal sinus cancer often do not show any of these symptoms. In fact, these types of cancer are usually diagnosed in their later stages because early-stage cancer typically does not cause any symptoms. Nasal cavity or paranasal sinus cancer is often discovered when a person is being treated for seemingly benign, inflammatory disease of the sinuses, such as sinusitis.

Possible symptoms of these cancers include:

- Nasal congestion and stuffiness that does not get better or even worsens
- Pain above or below the eyes
- Blockage of one side of the nose
- Post-nasal drip (nasal drainage in the back of the nose and throat)
- Nosebleeds
- Pus draining from the nose
- Decreased sense of smell
- Numbness or pain in parts of the face
- Loosening or numbness of the teeth
- Growth or mass of the face, nose, or palate
- Constant watery eyes
- Bulging of one eye
- Loss or change in vision
- Pain or pressure in one of the ears
- Trouble opening the mouth
- A lump or sore inside the nose that does not heal
- Lymph nodes in the neck getting larger (seen or felt as lumps under the skin)

Having one or more of these symptoms does not mean one has nasal cavity or paranasal sinus cancer. In fact, many of these symptoms are more likely to be caused by other conditions (although with cancer they do not get better over time). Still, if one has any of these symptoms, it is important to have them checked out by a doctor so that the cause can be found and treated.

Diagnosis of Paranasal Sinus and Nasal Cavity Cancer

To make the diagnosis, a complete medical history and physical examination are necessary. During a physical examination, the doctor feels for any lumps on the neck, lips, gums, and cheeks. The doctor will also inspect the nose, mouth, throat, and tongue for abnormalities, often using a light and/or mirror for a clearer view.

Signs of nasal cavity and paranasal sinus cancer are often very similar to symptoms of chronic or allergic sinusitis. The physical examination is important, and doctors may perform one or more of the tests listed below to reach a diagnosis. There are no specific blood or urine tests that can be performed to help make an early diagnosis of either of these types of cancer.

In addition to a physical examination, the following tests may be used to diagnose nasal cavity or paranasal sinus cancer:

- Biopsy - a biopsy is the removal of a small amount of tissue for examination under a microscope. Other tests can suggest that cancer is present, but only a biopsy can make a definite diagnosis. A pathologist then analyses the sample(s). A pathologist is a doctor who specialises in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease.

- Endoscopy – an endoscopy allows the doctor to see inside the body with a thin, lighted, flexible tube called an endoscope. The patient may be sedated as the tube is inserted through the mouth or nose to examine the head and neck areas. Sedation is the use of medication to help a person become more relaxed, calm, or sleepy. This examination has different names depending on the area of the body that is examined, such as laryngoscopy, which examines the larynx; pharyngoscopy, which examines the pharynx; or nasopharyngoscopy, which examines the nasal cavity and nasopharynx.

  In some cases, a diagnosis of paranasal sinus cancer will be made during endoscopic surgery for what is believed to be benign (non-cancerous) chronic sinusitis. Before completing the surgery, the surgeon should take a biopsy sample of healthy-looking tissue to confirm benign chronic sinusitis. This procedure is called a frozen section examination.

- X-ray - an X-ray is a way to create a picture of the structures inside of the body, using a small amount of radiation. An X-ray can show if the sinuses are filled with something other than air. If they are, the issue is usually not cancer but, instead, an infection that is treatable. If treatment does not work to clear the sinuses, then other more specialised X-ray tests may be done to identify the blockage. Signs of cancer on an X-ray may be followed up with a computed tomography scan, also called a CT scan.

- Computed Tomography (CT or CAT) scan - a CT scan creates a 3-dimensional picture of the inside of the body using X-rays taken from different angles. A computer then combines these images into a detailed, cross-sectional view that shows any abnormalities or tumours. A CT scan can also be used to measure the tumour's size. Sometimes, a special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient's vein or given as a liquid to swallow. CT scans are very useful in identifying cancer of the nasal cavity or paranasal sinus.

- Magnetic Resonance Imaging (MRI) – an MRI uses magnetic fields, not X-rays, to produce detailed images of the body, especially images of soft tissue, such as the eye in its socket and the part of the brain near the sinuses. An MRI can also be used to measure a tumour's size. A special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient's vein or given as a pill to swallow.

- Bone scan – a bone scan may be done to see if cancer has spread to the bones. A bone scan uses a radioactive tracer to look at the inside of the bones. The tracer is injected into the patient's vein. It collects in areas of the bone and is detected by a special camera. Healthy bone appears grey to the camera, and areas of injury, such as those caused by cancer, appear dark.

- Positron Emission Tomography (PET) or PET-CT scan - a PET scan is usually combined with a CT scan (see above), called a PET-CT scan. However, one may hear the doctor refer to this procedure just as a PET scan. A PET scan is a way to create pictures of organs and tissues

inside the body. A small amount of a radioactive sugar substance is injected into the patient's body. This sugar substance is taken up by cells that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. A scanner then detects this substance to produce images of the inside of the body.

After diagnostic tests are done, the doctor will review all of the results with the patient. If the diagnosis is cancer, these results also help the doctor describe the cancer. This is called staging.

Devi, C.P., Devi, K.M., Kumar, P & Sindhu, R.V.A. 2019.
Introduction: Malignant tumors of sinonasal tract are extremely rare and comprise 3% of all head and neck malignant tumors. They constitute 0.2% of all invasive carcinomas. Sinonasal space is a small anatomical place, but is the site of origin for tumors with diverse histological features. Many of the tumors are similar to those that occur in various parts of the body and have overlapping histological features. A panel of immunohistochemical (IHC) markers is essential to diagnose these tumors. Most of the tumors arise in the maxillary sinus followed by ethmoid sinus. History and complete head and neck examination along with biopsy are mandatory for evaluating the disease.
Aim and objectives: To study the age-, sex- and site-wise incidence of different malignant lesions of the nasal cavity and paranasal sinuses. To subtype and classify the malignant tumors as per the WHO guidelines.
Materials and methods: Forty-seven cases of sinonasal tumors reported over a period of 3 years were retrieved from the archives of the department of pathology. The tissues were subjected to paraffin processing and stained with hematoxylin and eosin. IHC was done with a panel of markers, wherever necessary.
Results: The present study included a total of 47 malignant lesions. Of which, 24 cases (51.06%) were squamous cell carcinomas (five cases each of well-differentiated SCC and moderately differentiated SCC and 14 cases of nonkeratinizing SCC). Five (10.63%) cases each were of neuroendocrine carcinoma and non-Hodgkin's lymphoma.
Conclusion: Malignant neoplasms of sinonasal tract have overlapping clinical and pathological findings; establishing the correct diagnosis is difficult without using a panel of IHC markers.

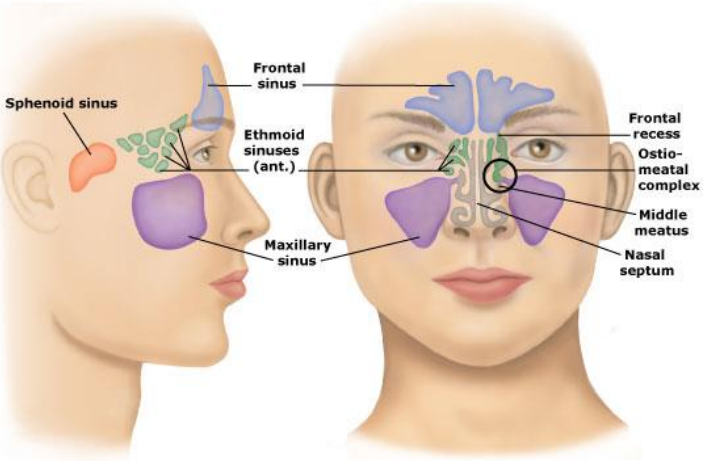
Treatment of Paranasal Sinus and Nasal Cavity Cancer
Before treatment can be commenced with, it is important to stage the cancer. Stage means how far the cancer has grown. Stage matters because it plays a large part in deciding on treatment. Doctors will base their treatment decisions for nasal cavity and paranasal sinus cancers on the type and location of the tumour and its stage.

Cohen, E.E.W., Bell, R.B., Bifulco, C.B., Burtness, B., Gillison, M.L., Harrington, K.J., Le, Q.T., Lee, N.Y., Leidner, R., Lewis, R.L., Licitra, L., Mehanna, H., Mell, L.K., Raben, A., Sikora, A.G., Uppaluri, R., Whitworth, F., Zandberg, D.P. & Ferris, R.L. 2019.
"Head and neck cancers, including those of the lip and oral cavity, nasal cavity, paranasal sinuses, oropharynx, larynx and nasopharynx represent nearly 700,000 new cases and 380,000 deaths worldwide per annum, and account for over 10,000 annual deaths in the United States alone. Improvement in outcomes are needed for patients with recurrent and or metastatic squamous cell carcinoma of the head and neck (HNSCC). In 2016, the US Food and Drug Administration (FDA) granted the first immunotherapeutic approvals - the anti-PD-1 immune checkpoint inhibitors

nivolumab and pembrolizumab - for the treatment of patients with recurrent squamous cell carcinoma of the head and neck (HNSCC) that is refractory to platinum-based regimens. The European Commission followed in 2017 with approval of nivolumab for treatment of the same patient population, and shortly thereafter with approval of pembrolizumab monotherapy for the treatment of recurrent or metastatic HNSCC in adults whose tumors express PD-L1 with a ≥ 50% tumor proportion score and have progressed on or after platinum-containing chemotherapy. Then in 2019, the FDA granted approval for PD-1 inhibition as first-line treatment for patients with metastatic or unresectable, recurrent HNSCC, approving pembrolizumab in combination with platinum and fluorouracil for all patients with HNSCC and pembrolizumab as a single agent for patients with HNSCC whose tumors express a PD-L1 combined positive score ≥ 1. These approvals marked the first new therapies for these patients since 2006, as well as the first immunotherapeutic approvals in this disease. In light of the introduction of these novel therapies for the treatment of patients with head and neck cancer, The Society for Immunotherapy of Cancer (SITC) formed an expert committee tasked with generating consensus recommendations for emerging immunotherapies, including appropriate patient selection, therapy sequence, response monitoring, adverse event management, and biomarker testing. These consensus guidelines serve as a foundation to assist clinicians' understanding of the role of immunotherapies in this disease setting, and to standardize utilization across the field for patient benefit. Due to country-specific variances in approvals, availability and regulations regarding the discussed agents, this panel focused solely on FDA-approved drugs for the treatment of patients in the U.S."

Gou, X.X., Jin, F., Wu, W.L., Long, J.H., Li, Y.Y., Gong, X.Y., Chen, G.Y. Chen, X.X. & Liu, L.N. 2018.
PURPOSE: The aim of this study was to evaluate the efficacy and toxicities of induction chronomodulated chemotherapy in comparison with conventional induction chemotherapy for nasopharyngeal carcinoma (NPC).
PATIENTS AND METHODS: Between 2003 and 2004, 60 patients with pathologically confirmed NPC were included and randomly assigned to two groups. Patients in the chronomodulated chemotherapy group (n = 30, CC group) received cisplatin at 80 mg/m^2 through intravenous infusion from 10:00 to 22:00 and 5-fluorouracil (5-FU) at 1000 mg/m^2 plus citrovorum factor at 200 mg/m^2 from 22:00 to 10:00 each day for 3 days. Patients in the routine chemotherapy group (n = 30, RC group) received cisplatin infusion within 1 h and 5-FU infusion for about 24 h. The dose in the RC group was the same as that in the CC group. The total irradiation dose in each group was 70 Gy for the whole nasopharynx.
RESULTS: One month after induction chemotherapy, the overall response rate was 96.7% in the CC group versus 73.3% in the RC group (P = 0.011). By the end of the 10-year follow-up, 11 patients (36.7%) in the CC group had experienced local recurrence versus 11 patients (36.7%) in the RC group (P > 0.999). The overall survival rates at 1, 5, and 10 years were 96.7%, 53.3%, and 43.3%, respectively, in the CC group, and 96.7%, 43.3%, and 33.3%, respectively, in the RC group (P = 0.346). During induction chemotherapy, the incidence rates of leukocytopenia (43.3% vs. 80%, P = 0.003), thrombocytopenia (26.7% vs. 56.7%, P = 0.018), and nausea/vomiting (40% vs. 66.7%, P = 0.038) were significantly lower in the CC group than in the RC group. The incidence of radiation-induced complications was similar in these two groups.
CONCLUSION: Compared with conventional chemotherapy, induction chrono-chemotherapy seemed to reduce chemotherapy-related toxicities and improve average local relapse time in patients treated with combined chemoradiotherapy for NPC.

[Picture Credit: Nasal and Paranasal Sinuses]



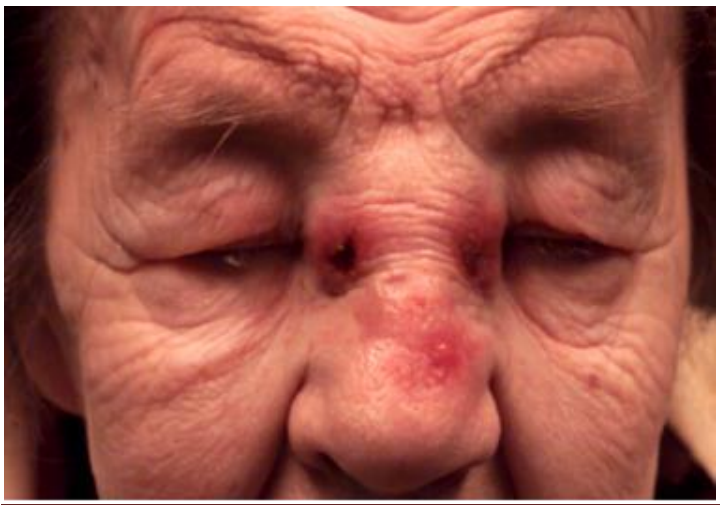
Zou, X., Wang, S.L., Liu, Y.P., Liu, Y.L., Zou, R.H., Zhang, Y.N., You, R., Yang, Q., Xie, Y.L., Lin, M., Huang, P.Y., Jiang, R., Zhang, M.X., Qian, C.N., Mai, H.Q., Guo, L., Hong, M.H. & Chen, M.Y. 2018.

BACKGROUND: Postradiation nasopharyngeal necrosis (PRNN) is a severe complication after radiotherapy in patients with nasopharyngeal carcinoma (NPC), which can severely affect the quality of life and threaten the patient's life. Only 13.4%-28.6% of patients can be cured by traditional repeated endoscopic debridement. Here, we introduced an innovative curative-intent endoscopic surgery for PRNN patients and evaluated its clinical efficacy.

METHODS: Clinical data of 72 PRNN patients who underwent radical endoscopic necrectomy, followed by reconstruction using a posterior pedicle nasal septum and floor mucoperiosteum flap were analyzed to determine the efficacy of this surgery. The endpoints were complete re-epithelialization of the nasopharyngeal defect, relief of headache, and overall survival (OS).

RESULTS: All surgeries were successfully performed without any severe postoperative complications or death. The median value of numeric rating scales of pain decreased from 8 before surgery to 0 after surgery ($P < 0.001$). Fifty-one patients (70.8%) achieved complete re-epithelialization of the nasopharyngeal defect. The number of cycles of radiotherapy (odds ratio [OR], 7.254; 95% confidence interval [CI] 1.035-50.821; $P = 0.046$), postoperative pathological result (OR, 34.087; 95% CI 3.168-366.746; $P = 0.004$), and survival status of flap (OR, 261.179; 95% CI 17.176-3971.599; $P < 0.001$) were independent risk factors of re-epithelialization of the nasopharyngeal defects. Postoperative pathological result (hazard ratio [HR], 5.018; 95% CI 1.970-12.782; $P = 0.001$) was an independent prognostic factor for OS. The 2-year OS rate of the entire cohort was 77.9%.

CONCLUSION: Curative-intent endoscopic necrectomy followed by construction using the posterior pedicle nasal septum and floor mucoperiosteum flap is a novel, safe, and effective treatment of PRNN in patients with NPC.



<u>Treating sphenoid sinus cancer</u>

Because of where these sinuses are, they are very difficult to get to during surgery. Doctors will usually use radiotherapy to treat these cancers.

[Picture Credit: Nasal Cavity Cancer]

<u>Treating nasal cavity cancer</u>

If one has cancer of the nasal cavity treatment will depend on where the tumour is and its stage. If the cancer is in the tissue separating the two sides of the nose (the nasal septum) one will

most likely have surgery.

For cancers elsewhere in the nasal cavity, radiotherapy works just as well as surgery. It is often the preferred treatment because it does not change the appearance of the nose as much as surgery. If the cancer is very advanced, the doctor may suggest both treatments, with radiotherapy before or after surgery.

Treating other types of nasal cavity and paranasal sinus cancer

This includes lymphomas, sarcomas and melanomas. Treatment for lymphomas of the nasal cavity and paranasal sinuses is the same as for other types of lymphoma.

If one has a melanoma or sarcoma of the nasal cavity or paranasal sinuses, one will most likely have surgery.

Treatment if the cancer comes back

Treatment depends on where the cancer has come back and the treatment one had first time round. The doctors may choose a different treatment from what one had before. Unfortunately, once a nasal or sinus cancer has come back, it is not usually possible to cure it. But treatment can help to relieve symptoms.

If one had radiotherapy to treat maxillary or ethmoid sinus cancer or nasal cavity cancer the first time round, then this time the patient may have craniofacial surgery.

If one previously had surgery, this time one will have radiotherapy. If radiotherapy or surgery does not help, one may then have chemotherapy. If the cancer has come back in the sphenoid sinuses one may have chemotherapy.

Lin, C.S., Chen, Y.W., Liu, S.C., Tsao, C.C., Lin, K.T., Lee, S.P., Fan, C.Y., Liu, M.Y., Shen, P.C. & Jen, Y.M. 2018.

BACKGROUND: The purpose of this study was to present our comparison of the clinical outcome of patients with nasopharyngeal carcinoma (NPC) treated with whole-field intensity-modulated radiotherapy (whole-field-IMRT) or split-field-IMRT.

METHODS: We retrospectively studied 388 patients with M0 NPC. The median lower neck doses were 50 Gy in 1.35 Gy/fractions for the 240 whole-field-IMRT patients, and 50.4 Gy in 1.8 to 2.0 Gy/fractions for the 148 split-field-IMRT patients.

RESULTS: The IMRT technique did not affect the overall survival (OS; P = .077) and locoregional control (P = .231) rates. However, the split-field-IMRT group had more locoregional recurrences at the whole neck (P = .005) but not at the nasopharynx (P = .968) or the lower neck (P = .485). The patients treated with split-field-IMRT (43.2%) had more grade III neck fibrosis than the patients who received whole-field-IMRT (18.3%; P < .001). Only 1 patient had temporal lobe necrosis in our study.

CONCLUSION: Our study shows that whole-field-IMRT using a lower dose/fraction for the lower neck results in at least comparable locoregional control and less fibrosis compared to conventional fraction with split-field-IMRT.

About Clinical Trials

Clinical trials are research studies that involve people. They are conducted under controlled conditions. Only about 10% of all drugs started in human clinical trials become an approved drug.

Clinical trials include:

- Trials to test effectiveness of new treatments
- Trials to test new ways of using current treatments
- Tests new interventions that may lower the risk of developing certain types of cancers
- Tests to find new ways of screening for cancer

The *South African National Clinical Trials Register* provides the public with updated information on clinical trials on human participants being conducted in South Africa. The Register provides information on the purpose of the clinical trial; who can participate, where the trial is located, and contact details.

For additional information, please visit: www.sanctr.gov.za/

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