

Brief Communication

Do mobile phones cause hearing and vision complaints? A preliminary report

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Mobile phones are low power radio devices that transmit and receive radio frequency radiation at frequencies in the microwave range of 900-1800 MHz. Despite repeated horror stories about mobile phones in the media, the number of mobile phone users worldwide is approaching one billion. There are 2 direct ways by which health could be affected as a result of exposure to radio frequency radiation. These are thermal (heating) effects caused mainly by holding mobile phones close to the body, and as a result of possible non-thermal effects.¹ Despite apprehensive discussion in electronic and print media about mobile phones, and their effects on different systems of the body observed in different countries, their effect regarding hearing and vision problems in the Saudi population has not been reported yet, where mobile phones are excessively used in such a way that recently another zero digit was added while dialing the mobile number. The aim of this study was to determine the link between the use of mobile phones and hearing and vision complaints in the Saudi population.

The present study was conducted in the Department of Physiology, College of Medicine, King Khalid University Hospital, King Saud University, Riyadh, Kingdom of Saudi Arabia (KSA) during the year 2002-2004. The sample consisted of 437 volunteer subjects recruited from the College of Medicine, King Saud University and from the different areas of Riyadh, KSA. The study sample was predominantly 55.1% male, and 39.9% female, with ages ranging from 18-42 years. A structured questionnaire was constructed particularly for this study in Arabic, and was also translated into English. The questionnaire was designed so that it could be used in a structured interview context or by self-completion. It assessed general physical characteristics, occupation of the participants, medical history and different questions regarding the type of mobile phones, their use, number and average duration of outgoing and incoming calls and duration of exposure to mobile phones. Subjects with known history of gross anemia, diabetes mellitus, high blood pressure, central or peripheral nerve diseases, congenital hearing and vision disorders, subject using any medication or computer professionals were excluded from the study. The data were analyzed by using SPSS program for windows. Clinical findings

comparison was carried out on the basis of mean percentage between the different groups.

The present study results show the health problems associated with duration of incoming or outgoing calls, or both, for respondents as a percentage of total numbers. The associated percentage for complaint of earache, heating around the ear and decreased hearing was 31.2% with duration of calls 5-10 minutes per day; 42.9% with 10-30 minutes; 30.4% with 30-60 minutes; 45% with 60-120 minutes, and 36.4% with more than 120 minutes per day. Similarly, the percentage for decreased or blurred vision, or both were 6.2% with duration of calls 5-10 minutes per day; 3.1% with 10-30 minutes; 2.2% with 30-60 minutes; and 5% with 60-120 minutes per day. The overall complaints regarding hearing were 34.5% and vision problems were 4.8%.

The popular belief is that the mobile phone adverse health affects can be induced by the heating effect of GSM (Global system of mobile communication) radiation. The reported adverse health effects and the extensive portfolio of non-thermal effects that have been published in the scientific literature during the last few years, indicate that the type of radiation now used in GSM phone can and does affect living organisms in various non-thermal ways. Kellenyi et al² reported that exposure to GSM phone radiation caused an increase in auditory brainstem response in the exposed side of human subjects and showed a hearing deficiency in the high frequency range. The present study also supports these results. Ofiedal et al.³ observed sensation of warmth on the ear and behind or around the ear and burning sensations in the facial skin in connection with the use of a mobile phone. Our findings are in conformity with these results. Sandstrom et al.⁴ studied the hazards of mobile phones and reported feelings of discomfort and warmth behind, or around the ear while using mobile phones. Our results are in agreement with these results. In addition, it has been also reported that, 2 Swedish subjects who used a mobile phone extensively for many years, have gone blind in one eye, on the side of the head they use their phone. In one case, symptoms began with intense pain in one eye which was eventually diagnosed as ulcers on the cornea. There are 2 other subjects in the same town who attribute the loss of sight in one eye on the same side of the head they use their mobile phone.⁵

The present study demonstrated a relationship between hearing and vision complaints in subjects exposed to mobile phone emissions. Keeping in view the findings of the present study, it is advisable; therefore, that the use of a mobile phone is a risk factor for health hazards and suggests that

unnecessary use of mobile phones should be avoided by health promotion activities, such as group discussion, public presentations and through electronic and print media sources. In addition, further large sized studies, along with detailed clinical examinations, are needed to study the long-term effects of mobile phone use and hearing and vision disorders.

Received 6th December 2004. Accepted for publication in final form 22nd February 2005.

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Duodeno-jejunal anastomosis with trans anastomotic nasojejunal tube for congenital duodenal obstruction

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Duodenal atresia, severe duodenal stenosis, or both, necessitate an urgent reestablishment of the duodenal continuity, by duodeno-duodenostomy or duodeno-jejunostomy. Calder¹ reported the first description of duodenal atresia in 1773, but Vidal² who performed a gastro-jejunostomy records the first successfully treated case in 1905 in France. The first successful duodeno-jejunostomy was in Denmark performed by Ernst³ in 1914. Duodeno-duodenal or duodeno-jejunal anastomosis may not always function correctly due to some type

of a dystomy of the duodenum as a result of it being so thick and dilated. Neonatal intensive care and total parenteral nutrition have significantly improved the outcome of these patients. Although some studies have reported that the operation of duodeno-jejunostomy with trans-anastomotic stenting is to be reserved for a second time repair of this congenital anomaly,⁴ we stressed in this study our satisfaction with the results of this procedure.

From November 1993 to February 2004, 21 neonates with congenital duodenal obstruction underwent a trans meso-colic duodeno-jejunal anastomosis stented by a 6 French (Fr) trans-anastomotic naso-jejunal feeding tube (TNJT) at Al-Hada Military Hospital, Attaif and King Faisal Specialist Hospital and Research Centre, Jeddah, Kingdom of Saudi Arabia. Anastomosis was always chosen to be at the distal lower aspect of the dilated duodenum. The TNJT is kept in place for 2 weeks. A second decompressive nasogastric tube size 8 Fr is also inserted during the procedure and removed before starting oral feeding on day 4, when simple abdominal radiograph showed the normal intestinal containing air distribution. Epidemiological, clinical, radiological and therapeutic data as well as their postoperative course were abstracted from their files. The complications and the outcome of surgery were also registered. The types of anomalies were defined during surgery. Extrinsic obstruction secondary to malrotation, intra luminal valve and short stenosis was excluded from this study.

First degree of consanguinity was found in 16 cases. Prenatal diagnosis was suspicious in 10 of the 19 cases that underwent a prenatal ultrasound, 10 were associated with polyhydramnios, and prematurity as noted in 11 cases out of 21 (Table 1). The associated congenital anomalies were found in 12 cases, the most common was cardiac in 7/21, Down's syndrome in 7/21, renal anomalies requiring a urology follow up in 2/21, malrotation with atresia in 2/21, musculo-skeletal in 2, and cloacae in one. None of the patients presented with other intestinal atresia or exteriorized biliary tract anomalies. In 19 cases, the postnatal diagnosis was confirmed within the first 48 hours by the presence of the classical radiological double bubble shape. Abdominal radiograph was requested to confirm the prenatal ultrasound finding or as a work up for recurrent vomiting. In the 2 cases of annular pancreas with simple stenosis, the diagnosis was carried out on the fourth and fifth day by contrast meal for feeding intolerance (gastric content copious vomiting occurring shortly after each meal), the simple abdominal radiograph was not conclusive. In 18 cases, laparotomy was performed within 48-hour post diagnosis, the others were postponed for preoperative cardiac evaluation, or infections secondary to aspiration pneumonia.