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REMOTE RESULTS OF SURGICAL TREATMENT OF PRIMARY HYPERPARATHYROIDISM

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The article is devoted to the problem of surgical treatment of primary hyperparathyroidism. The paper presents a comparison of the results of surgical treatment performed from a standard access with a mandatory revision of 4 parathyroid glands and a gentle method of small access with the removal of the affected parathyroid glands.

The obtained results showed the promise of sparing approach to the treatment of PGPT caused by adenoma of the parathyroid glands was.

Keywords: primary hyperparathyroidism, parathyroidism, hyperplasia, adenoma, low access, quality of life assessment.

Relevance. Primary hyperparathyroidism (PGPT) - primary pathology parathyroid glands, characterized by excessive secretion of parathyroid hormone. Since the latter is a regulator of mineral exchange in the pathological process involved almost all organs and systems, in turn, generates the clinical picture diverse and difficulties in the differential diagnosis of the disease. With scant clinical symptoms in the early stages and

the presence of asymptomatic forms of the course, PGPT in most cases detected by chance, proving the importance of minimum endocrinological vigilance in respect of non-specific complaints of patients: to fatigue, weakness, depression, etc. With the development of studies and laboratory methods in routine practice introduction biochemical screening tests on blood ionized calcium levels as the primary marker of the disease, there is a jump increase PGPT initially diagnosed cases [1].

Today, surgery with the classic traditional access by Kocher is the "gold standard" treatment for patients with PGPT [2], which provides a full audit of all parathyroid glands.

Along with this, there are reports about the possibility of using a small access by removing adenomas parathyroid glands without revision others [3,4]. But among modern writers there are opponents who report high relapse rate.

Purpose. To evaluate the effectiveness of surgical treatment PGPT based

on the analysis results of the nearest and remotest from the standard and parathyroidectomy small accesses.

Materials and methods. From 2009 to 2017 Burdenko Clinic of Surgery №1 based of the First Moscow State Medical University named after I.M. Sechenov. has been on the treatment of 418 patients PGPT. The selection criteria in this paper is a must histological confirmation of adenoma parathyroid glands. The current study included 370 patients with adenomas parathyroid glands. Patients with hyperplasia (n = 37) and parathyroid glands cancer (n = 11) were excluded.

The study consisted of a study of disease histories, history and primary examination data, laboratory-instrumental examination methods data, operation protocols and histological study results, and postoperative course data.

To study the long-term results of surgical treatment, 370 patients with PGPT were divided into 2 groups:

- Group 1 (GR1) - Patients who received surgical treatment until 2012, op-

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erated from the access by Kocher with a mandatory audit of all parathyroid glands 4 (n = 176)

- Group 2 (GR2) - Patients who received surgical treatment from 2013 to 2017., who have surgery performed, generally smaller incisions and was modified to remove parathyroid glands (n = 159). In the same period it was in the treatment of patients who underwent surgery of Standard Access due to discordance of results of diagnostic studies (mismatch of conclusions of ultrasound and scintigraphy) (n = 35). We also looked at these patients within group 2 (GR2) to make the groups uniform and comparable.

The average age of patients at the time of diagnosis PGPT: $56,588 \pm 1,32$, the distribution by age: 20-40 years - 5,7%, 41-60 years - 48.4%, and over 60 years old - 45.9% (Fig.1).

Based on the presented data, it can be concluded that PGTP affects mainly women at the age of 40-60 (Fig.2), and the peak of morbidity correlates with the onset of menopause (47 ± 1.5 years) - such patients in our work the vast majority - 47.7% (Fig.3).

Clinical diagnostics. PGPT, being a chronic endocrine, metabolic disease, often has a long period of latent course.

Clinical manifestations were detected in 35% patients (n = 129) included in the study, and 65% (n = 241) did not have clinical manifestations and PGPT was suspected at the outpatient stage as an "accidental finding," during routine dispensation, preventive examination, or under the supervision of an endocrinologist for thyroid gland disease.

The analysis of the obtained data revealed the following forms of disease: renal (visceropathic) (6%), bone (20%), mixed (9%) and subclinical forms (65%) (Fig.4).

Laboratory diagnostics. Determination of total and ionized blood serum calcium remains the simplest, most accessible and most effective method for diagnosis of PGPT.

Levels of total and ionized calcium were raised in all patients prior to starting treatment (Fig.5).

Instrumental diagnostics. As the main pre-operative diagnostic method for all patients in the groups under study, ultrasound of thyroid gland and parathyroid gland was carried out on stationary and portable ultrasound diagnostic devices with a frequency of radiated Uz of 3.5 MHz, thanks to which concomitant diseases of thyroid gland were also detected, as a result of which the volume of the operation was expanded to subtotal resection of thyroid gland, hemithyroid-

ectomy or thyroidectomy with removal of affected parathyroid glands.

Scintigraphy with technetium was also performed for topical diagnosis to 357 patients. Due to objective circumstances, 13 patients were not examined: in 8 patients it happened for technical reasons, 5 patients were operated on urgently, due to extremely high level of Ca and threat of hypercalcemic crisis development. On the basis of these two methods, it was possible to determine the percentage of matches of conclusions at the pre-operational stage of patient examination in the formation of a preliminary diagnosis.

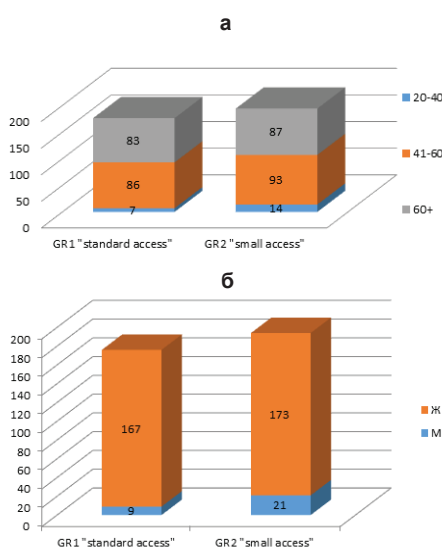


Fig. 1. Distribution of patients with PGPT by age

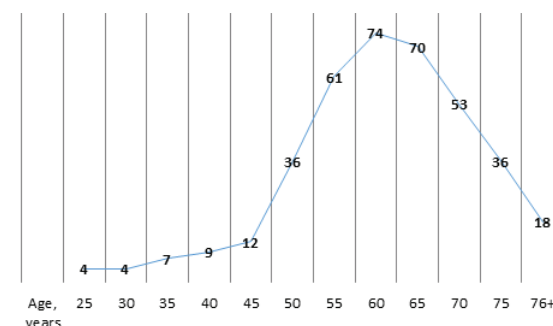


Fig.2. First-time PGPT in women according to age



Fig. 3. Median of pre-operative Ca level distribution in patients with PGPT

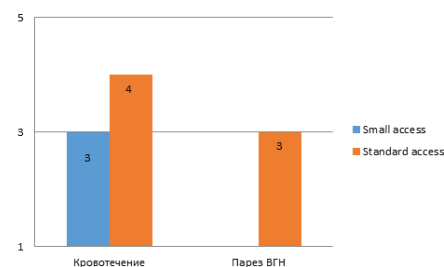


Fig. 4. Early postoperative complications

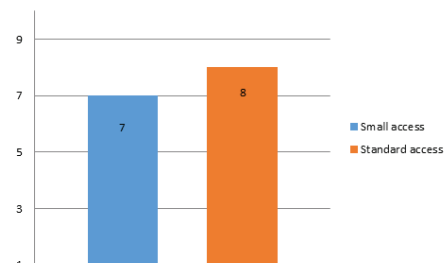


Fig. 5. Relapses of PGPT after operative treatment

The percentage of matching ultrasound and scintigraphy data was 84%, of which:

- 1GR. 152 patients (86.3%);
- 2GR. 159 patients (81.9%);
- 18.1% patients in 2 group, the data did not match (n = 35), so they were operated from the traditional "big" access by Kocher.

Data discordance in general was identified in 59 patients (15.9%) involved in the study and was due to:

- Different location of adenoma according to ultrasound and scintigraphy - 31% (n = 18);
- Impossibility to visualize adenoma by ultrasound - 69% (n = 41).

Thus, 59 patients performed a neck Multislice computed tomography on a 320-helix computed tomograph ToshibaAquilionONE to refine the localization of the process.

Intraoperative ultrasound was performed to all patients operated since 2007. To 2012, and patients operated from 2013 to 2017 - only if the results of ultrasound and scintigraphy differ at the pre-medical stage. The data obtained were compared with the intraoperative pattern in the test groups of patients (n = 35). In the surgical treatment of 159 patients, the technique of low access was used, with complete matching of the data obtained at the pre- and intraoperative stages, which indicates the high importance of clinical data collected during the pre-hospital period.

Results of treatment. The length of the operation averaged 80 ± 15 minutes in the 1 group, and was significantly reduced to 40 ± 10 minutes in the 2 group. The development of early postoperative complications was in 1 group: 4 bleeding and 3 nervus laryngeus recurrens paresis, in 2 group - 3 bleeding (Fig.6).

Postoperative treatment results were comparable in both groups: 83% ($n = 307$) showed a sharp decrease in Ca to normal values and sometimes significantly lower than normal. In 11% ($n = 34$) patients observed clinical manifestations of hypocalcemia in the form of neuromuscular irritability - convulsions of back and leg muscles, against the background of conservative treatment, Ca level normalized.

17% patients ($n = 63$) showed persistent hypercalcemia, predominantly associated with hypovitaminosis D.

It was possible to analyze the distant results of treatment in 295 patients.

We observed recurrent hypercalcemia in 15 patients, which was caused by:

- "Unsuccessful" attempt to detect adenoma in the first operation - 4 cases (26.7%);

- Presence of the second "silent" adenoma in the gland, which initially did not accumulate radiopharmaceutical and could not be visualized in scintigraphy - 6 cases (40%);

- Obtaining histological conclusion indicating lymphoid tissue removal - 5 cases (33.3%).

The total recurrence rate in 1 group was 8 cases, in 2 groups - 7 cases, which is statistically unreliable and this gives grounds for parathyroidectomy from low access due to adenoma (Fig.7).

Histological examination of remote parathyroid glands was carried out in the

pathologic department of First Moscow State Medical University named after I.M. Sechenov. All patients involved in the study had histologically confirmed parathyroid glands adenoma.

Discussion of results: According to many authors, the mandatory revision of all 4 parathyroid glands is a necessary measure of surgery, regardless of the results of pre-operative instrumental diagnostics, and traditional parathyroidectomy through cross-access by Koher - the "gold" standard of surgical treatment [2].

On the other hand, Sleptsov I. V. et al., (2012) consider that bilateral neck revision can be shown only in the following situations: in case of discordant or negative results of ultrasound and scintigraphy, lack of possibility to detect adenoma of parathyroid gland during intervention from small access, in case of history of operations on thyroid gland or parathyroid gland, in patients with persisting or recurrent [3, 4, 5].

The results of our work reflect modern trends towards organ-preserving surgical interventions and correspond to the results of domestic and foreign authors [6, 7].

Taking into account current trends in surgery and improvement of methods of topical diagnostics, it is more appropriate to use sparing, less traumatic technologies of treatment of PGPT - from small access, but only if there is histologically confirmed adenoma and concordance of diagnostic research.

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