Review

Surgical Procedures with Questionable Indications Used in Russia

Sergei Jargin *

Posted Date: 12 January 2024

doi: 10.20944/preprints202401.0961.v1

Keywords: Peptic ulcers; gastrectomy; diabetes; portosystemic shunting; asthma; lung denervation; medical ethics

Review

Surgical Procedures with Questionable Indications Used in Russia

Sergei V Jargin

Peoples' Friendship University of Russia, Moscow, Russia; argin@mail.ru

Abstract: This review summarizes available data on invasive procedures applied with questionable indications in Russia in the recent past: mastectomy with the removal of muscles, gastrectomy for peptic ulcers, spleno-renal anastomosis for diabetes mellitus, thoracic surgery for bronchial asthma, overuse of surgery in tuberculosis, excessive and compulsory treatments of alcohol-dependent patients, etc. Among factors contributing to the use of invasive procedures with unproven efficiency have been the partial isolation from international scientific community, insufficient consideration of the principles of professional autonomy, informed consent and scientific polemics, training of medical personnel. It is known that invasive procedures can exert a placebo effect, which might have contributed to reported efficiency of some methods discussed here. However, by definition, placebo must be free of risks.

Keywords: Peptic ulcers; gastrectomy; diabetes; portosystemic shunting; asthma; lung denervation; medical ethics

Introduction

This review is an update and continuation of papers on invasive procedures applied in the former Soviet Union (SU) with questionable clinical indications.[1-3] According to the author's estimates after a practice abroad (repeatedly during 1990-2008), an average size of malignant tumours in surgical specimens was larger in Moscow clinical centres than in hospitals of Western Europe, which reflects the timeliness of cancer diagnostics. Another difference: almost all mastectomy specimens abroad were without muscle. The worldwide tendency towards a more sparing breast cancer management was not followed in the former SU for some period. In the 1980s and decreasingly in the 1990s, the Halsted procedure with the removal of both *Pectoralis* muscles was a predominant method of breast cancer (BC) management;[4-7] it was presented as the main treatment modality of BC in some textbooks and monographs published after the year 2000.[8-10] The principle of informed consent was often disregarded. The surgical modality could be extended to a radical (Halsted) procedure if an intraoperative frozen section examination found e.g. an early (2 cm) BC.[11] The latter operation is known to be associated with complications; millions of women underwent it in the former SU. Even more radical methods were recommended and applied.[12] Newly developed mastectomy modalities with the muscle resection have been patented.[13,14] Old age was not regarded as contraindication to a radical surgery.[15] In view of complications, some experts recommended the modified radical mastectomy of Patey with resection of the smaller pectoral muscle for relatively early (T1-2) laterally located BC.[16-18] Others advocated the Halsted procedure.[19] The Patey operation is also associated with adverse effects; nonetheless, it has been broadly used in the Russian Federation (RF) in last decades. During the author's practice (1995-1998) at the pathology department of the Ostroumov hospital in Moscow, incorporating the Centre for Senology (named Mammology in Russia), almost all mastectomy specimens independently of tumour size included the smaller pectoral muscle; but the Halsted procedure was applied as well. The article dated 2007 discussed the "gradual abandonment of the Halsted operation."[20] In papers dated 2015-2022, the Patey operation was still mentioned as a routine procedure;[21-23] but the preservation of both pectoral muscles was finally becoming a standard. Today, the recommendations are adjusted to international patterns.

 doi:10.20944/preprints202401.0961.v1

Diabetes mellitus

The surgical spleno-renal anastomosis with the shunting of pancreatic blood into the systemic circulation was introduced by Eduard Galperin and applied for the treatment of insulin-dependent diabetes mellitus.[24-31] At the same time, Galperin wrote: "Diabetic patients generally tolerate surgery very poorly." [30] The method was applied also in type 2 diabetes.[32,33] The supposed mechanism was "creating a more optimal interaction of subcutaneously injected insulin and glucagon produced in the pancreas."[24] Of note, in patients with liver cirrhosis the surgical portocaval shunting resulted in deterioration of oral glucose tolerance.[34] Diabetes mellitus was even regarded to be a contraindication for portocaval anastomosis operations.[35]

In a series of 415 patients, early post-operative complications were observed in 28 patients including 2 cases of sepsis, 5 of pyelonephritis, 5 of pneumonia; 2 patients died in the first post-surgery week. Ketonuria was observed in 18 patients,[25] which agrees with the known fact that surgical stress may trigger ketosis in diabetics. Comparable percentages of complications were given in the article.[24] The patients were subdivided into groups with a strong, moderate and absent effect.[26] There was no group with deterioration, so that the assessment could have been biased. According to another report, thrombosis of the shunt was found by angiography in 27% of the patients during eight months post-surgery.[27] Severe acidosis was designated as a typical side effect.[27,28] The anti-diabetic efficiency of the shunting was reported to be moderate both in humans and in the experiment on dogs, whereas a majority of the animals did not survive the diabetes induction by streptozotocin or pancreatic resection with a subsequent shunting surgery.[29] During one-year (1990) engagement in the United States, Galperin used his method on dogs and rats deploring that there was no opportunity to apply it in humans.[30]

By 2010, the surgical treatment of diabetes described above was still in use while a high thrombosis risk of the shunt was pointed out.[28] During the operations, biopsies from the pancreas (~0.5 cm) and kidneys were taken. Histological descriptions included glomerulitis with mesangium interposition, relocation of mesangial cells to the periphery of capillary loops and formation of double-contoured basement membranes, presented by the authors as typical features of diabetic glomerulosclerosis.[36] In fact, these changes are typical for membranoproliferative glomerulonephritis. This condition, if found in a diabetic patient, is regarded as a superimposed disease requiring special therapy. Kidney biopsy is generally indicated for diabetics only if a renal condition other than diabetic nephropathy is suspected. The misrepresentation of histological features of glomerulonephritis as traits of diabetic nephropathy may lead to inadequate therapy. Finally, renal and pancreatic biopsies are associated with risks. Other invasive procedures applied within the framework of the surgical treatment of diabetes included renal and splenic venography and celiac arteriography.[24,25]

Gastric ulcers

Certain surgical treatments of gastro-duodenal ulcers in the former SU were different from the international practice.[37] According to the author's observations, gastric resections were rarely performed abroad for peptic ulcers; their volume was smaller, being usually equivalent to antrectomy. For perforated ulcers, a local excision was usually performed, while a ring-shaped specimen was sent to the pathologist. Laparoscopic repair is used increasingly often these days. In Russia, primary gastric resection (2/3-3/4 or even 4/5 of the stomach), antrectomy with vagotomy, or a simple suture (depending on the patient's condition) was performed.[38-43] Admittedly, recent guidelines included ulcer excision along with suturing and resection among treatment options for perforated ulcers. The limited availability of modern medical therapy was designated as social indication for the stomach resection.[40] Certain papers called attention to the adverse effects of resections.[37,44] At least a fivefold decrease in gastric resection frequency in ulcer patients during last decades has been reported from some institutions,[45-47] which alone indicates an overuse in the recent past.

The hyper-radicalism in the gastric surgery originates from Sergei Iudin (the spelling is according to the PubMed; in earlier papers spelled Sergey Yudin),[48] who was a "passionate supporter

 doi:10.20944/preprints202401.0961.v1

of gastric resections in ulcer perforations."[49] According to his doctrine, the pylorus and lesser curvature must be resected at an ulcer surgery.[48] During the World War II, Iudin was a leading surgeon of the Soviet army. He was notorious for radical operations: "Total and wide resection of devitalised tissue… resection rather than drainage and removal of bone fragments in joint wounds (including knee and hip joints);"[49] "Unhesitatingly excise muscular tissue to access fractured bone."[50] As per former health minister B.V. Petrovsky, Iudin's radicalism in military surgery, followed by other surgeons, led to haemorrhages, extensive defects of osseous and soft tissues.[51] Iudin's articles recommending stomach resection in ulcer patients were published later with positive editorial commentaries;[48] his writings are cited now as before. Resection of the stomach in case of ulcer perforation has been advocated by many experts from the former SU.[37,40,52-56] The continuous adherence to this method was explained by the limited accessibility of modern drugs.[37,40] In some articles recommending resections, it was stated that the drug therapy doesn't provide an adequate solution[56] and … doesn't achieve a complete recovery", so that resection should be performed early enough to avoid complications.[53] The definition "complete recovery" seems to be hardly applicable to the condition after gastrectomy. Anyway this strategy was in disagreement with that applied in other countries.[57] Like in some other topics discussed here, recommendations are currently adjusted to international patterns. However, some questionable guidelines have remained without commentaries, so that a reversion to suboptimal practices cannot be excluded.

Bronchial asthma

Another method to be commented was the thoracic surgery with denervation of lungs as a treatment of bronchial asthma[58-62] referred to as "the most accepted procedure" in the Instruction by the Health Ministry of RF.[59] Among others, the "skeletonisation" of pulmonary roots,[59] auto-transplantation of lungs (complete removal with immediate re-implantation) [62,63] or intersection of trachea with subsequent suturing[64] have been proposed. The theoretical ground was the assumption that denervation "precludes abnormal nervous impulsation."[58] In this connection, questionable morphological descriptions of degeneration in neural ganglia have been proposed to corroborate the denervation.[58] The operation was officially recommended by the Health Ministry whereas thoracotomy with the lung denervation was designated as "the most accepted surgical treatment for severe bronchial asthma."[59] The skeletonisation method was patented and advocated for steroid-dependent and infectious-allergic varieties of bronchial asthma.[59,65] Repeated bronchoscopies were applied post-surgery.[62] Pulmonary denervation and lung resections were recommended also for asthma cases when drug and inhalation therapy had been efficient. It was suggested that non-invasive treatment prior to the surgery must be limited in time.[59] One research group effectuated surgical denervations in 457 asthma patients. The following complications were recorded: in 27 patients - inflammation not otherwise specified; 12 - dysphagia, vocal fold palsy or Horner syndrome; 11 - pneumonia, empyema, pneumothorax, paraplegia and 2 cases of hemiparesis; 58 complications not otherwise specified; 6 patients died within a month after the surgery.[61] By 2002, the method was still in use.[60] The denervation surgery was sometimes combined with a resection of pulmonary segments or lobes deemed pathologically altered.[59]

Pulmonary resections were used in bronchial asthma also without denervation, even in the cases when inhalation or drug therapy were efficient. Among indications for the surgical treatment were focal lesions: chronic pneumonia, bronchiectasis, pneumocirrhosis or "bronchitis deformans."[66] Certain authors stated that ≤10% of their asthma patients underwent resections.[67] The surgeries were performed also in patients with extensive bilateral inflammatory or fibrotic lesions, both in exacerbations and in remissions, supposed to be indicated for a radical treatment of asthma. This concept was advocated by Uglov,[66,68] who claimed a "resection of infected foci" to be the aim of asthma management. The therapy was based on the belief that "in 98% of cases, the cause of asthma is focal chronic pneumonia."[66] The purpose of the operation was the "removal of focal infection." Localized chronic pneumonia with bronchial lesions was by itself regarded to be indication for lung resection. Asthmatics were transferred from internistic departments for the surgical and bronchoscopic therapy. "After a course of therapeutic bronchoscopies,"[66] Uglov et al. performed lobe-

Preprints (www.preprints.org) | NOT PEER-REVIEWED | Posted: 12 January 2024 doi:10.20944/preprints202401.0961.v1

and segmentectomies, resecting parts of the lung regarded by them to be pathologically altered.[66,68] The surgery for pulmonary malformations in children has been commented previously.[69]

Tuberculosis

After the successful development of medical treatment of tuberculosis (Tb) in the 1950s, the use of surgery has decreased in many countries. The priority of the former SU in this field was claimed.[70-72] The surgery of Tb has been performed not only in specialized centres but also in peripheral hospitals.[72,73] This development was associated with the name of Mikhail Perelman, who criticized the Directly Observed Treatment, Short Course (DOTS) Program by the World Health Organization and endorsed the surgical treatment.[74]

In the period 1973-87, 285,000 patients with pulmonary Tb were operated on in the former SU, in 1987 - 26,000, while 85% of the surgeries were lung resections.[75] In 1986-88, ~17,500 surgeries for lung Tb were performed annually in RF only in specialized institutions.[70] The incidence of Tb in 1986 and 1988 was, respectively, 43.8 and 40.8 per 100,000.[76] More than 29% of new Tb cases were operated at that time. In 2003, only 10,479 surgeries (~9% of newly diagnosed cases) were carried out, deemed insufficient."[77] In the foreign literature, corresponding figures are usually below 5%.[78-80] In the same period, the incidence of Tb in Russia increased from 34.0 in 1991 to 90.4 per 100,000 in the year 2000.[76] Similarly to other diseases,[81,82] this drastic increase could have been partly caused by an underestimation during the Soviet period. In the year 2006, 12,286 surgeries were performed in RF for pulmonary Tb including 9300 (75.7%) resections and 399 (3.2%) pneumonectomies.[71] According to another report, the forms of Tb most frequently treated by resections and pneumonectomies were cavitary Tb (52.2%) and tuberculoma (43.9%).[83] For example, Perelman et al. reported a series of 578 operations in 502 patients including those with fibro-cavernous Tb (196 cases) and tuberculomas (161 cases). The most frequent procedures were resection (280 cases) and pneumonectomy (80). The authors concluded that "indications for surgical management of pulmonary Tb should be generally expanded."[84] Tuberculoma was the form of Tb most often operated by Giller et al. (2013): 81 from 179 cases in one series.[85]

Resections were recommended also for patients with inactive post-Tb fibrosis including oligosymptomatic cases.[86] On the other hand, surgeries were performed in active disseminated Tb.[87] In some provinces of the Urals, Siberia and Volga region, 25-40% of patients with destructive Tb were operated on.[88] At the time of initial Tb diagnosis, surgery was considered to be indicated in 15-20% of patients.[70] According to another paper, indications for surgery were ascertained in 20-30% of patients at the time of diagnosis and/or among cases of active Tb.[89] In Ekaterinburg and surrounding province (years 2006-2008), indications for surgery were found in 1784 from 4402 (40.5%) patients with pulmonary Tb, while 1079 (24.5%) were operated. Among reasons of the allegedly low surgery rate were the patients' non-compliance and unavailability.[90] According to the recent handbook, ~6.4% of Tb patients are operated in RF; but "in some provinces, which cooperated with the Perelman's Institute… the percentage has been much higher."[91] The topic of Tb surgery may come to light globally because of the developing multidrug resistance.[92] As per the estimate from Russia, the need for surgery has increased up to 15% over the last 20 years.[93] Despite the lack of clinical trial data on efficacy of adjunctive surgical therapy of Tb, some countries of the former SU have continued performing many lung surgeries, predominantly resections.[85,94,95]

Tuberculoma (>2 cm, also in children) has been generally regarded in Russia as an indication for surgery.[91,96] The same experts designated fibrocavitary Tb as an absolute indication for resection.[91] Tuberculomas >1 cm were routinely operated on,[97-99] which is contradicting to the international practice. There is an opinion that potential instability of tuberculoma does not justify thoracic surgery and that asymptomatic patients with stable solid lesions do not require therapy. Nonetheless, tuberculoma was the most frequent (44.2%) indication for lung surgery in Tb patients at the leading institution - Sechenov Medical Academy in Moscow;[71] while at some hospitals this percentage was 50-80%.[100] Tuberculoma has been a frequent indication for surgery in children and adolescents with Tb.[96,101] The surgical treatment of tuberculoma was recommended also for cases with extensive lesions in remaining pulmonary tissues.[102] Bilateral resections were performed for various forms of Tb

 doi:10.20944/preprints202401.0961.v1

including tuberculomas on both sides.[103-105] A study from the Sechenov Academy reported 771 lung operations, including 168 pneumonectomies, 181 lobectomies, 180 smaller resections, performed in 700 Tb patients, up to 4 operations/patient. Postoperative complications were recorded in 100 (12.9%) patients and lethal outcomes - in 12 (1.5%).[106] Another example from the same Academy: among 60 operated Tb patients the complication rate was 37%, mortality - 5%; 18.3% of the patients were dehospitalised with persisting complications.[107]

Resections were performed by some experts without preceding attempt of medical treatment or within one month after the diagnosis, when medical therapy could have been efficient.[98,108] One of the arguments in favour of the early surgery was the non-compliance increasing with time,[98] as the patients collected knowledge and advice. Apparently, the frequency of adverse effects has been underestimated due to the limited follow-up. Lung operations for Tb were performed and recommended also for aged patients with comorbidities.[109-112] Sokolov found indications for surgery in 210 from 289 (72.6%) Tb patients 50-73 years old and operated 180 (62.2%) of them, 144 operations being lung resections. Among the latter 144 patients, 93 (66.4%) had cavitating disease and 43 (30.8%) - tuberculoma. A post-surgery reactivation of Tb was recorded in 8.6% of the cases, fistula – in 27.2 %, atelectasis - 20%, pneumonia - 5.7%, pleural empyema - 3.6%, other complications - 12.9%; 8 (5.7%) patients died after the operations.[109] In the monograph based on 233 lung resections in Tb patients older than 50 years (mortality - 5.4%), Sokolov et al. reasonably concluded: "It is important that a surgery doesn't provoke an unfavourable outcome."[110] According to another report, tuberculoma was the most common indication, and lobectomy - the most frequent operation in elderly Tb patients, whereas potential contagiosity was among arguments in favour of the surgical treatment.[112] Statements of this kind can be found also in recent papers e.g.: "Surgery in patients with tuberculomas is recommended to reduce their infectiousness."[93] According to Giller et al., a reduction of Tb incidence and mortality can be achieved only by means of a "radical sanitation" of contagious patients also without destructive pulmonary lesions.[85] Note that tuberculoma is usually not contagious. It seems to be evident that potential contagiosity does not justify a thoracic surgery.

Out of 1311 Tb cases operated at the Phthisiopulmonology Institute in St. Petersburg during the period 1989-2001, 241 had Tb recurrences and 203 underwent repeated interventions.[113] Postoperative recurrences were regarded as indications for repeated surgeries up to a "concluding pneumonectomy"[104] and resections of the remaining sole lung.[114] For example, repeated resections on both sides with a concluding pneumonectomy along with 52 bronchoscopies were described in one case report.[115] Bilateral lobectomies or pneumonectomy plus contralateral "sparing" resection were deemed indicated for patients with a Tb lesion on one side and non-specific inflammatory or fibrotic lesions in the contralateral lung.[116] Bilateral resections and bilobectomies were performed in various forms of Tb including tuberculomas.[92,103-105,114,116,117] Resections were deemed applicable also in cases with severe respiratory insufficiency.[73,114,118,119]

The role of surgery in Tb remains controversial. The message of this article is that patients should not undergo operations to merely comply with doctrines. Evidence-based clinical indications should be determined individually. The patients must obtain objective information on potential benefits and risks to be able to make their own decisions. The informed consent began to be mentioned only recently in papers from the former SU reporting research using invasive methods, for example in a bronchoscopic study of paediatric asthma, where a consent of parents was regarded to be sufficient.[120] Of note, the principle of informed consent or assent is applicable also to adolescents and children.

The outpatient treatment of Tb, usual in other countries, was supposed to be hardly applicable in RF.[121] According to the governmental Regulation #378 of the June 16, 2006, patients with contagious Tb are not permitted to reside in one apartment with other people. As per the Federal Law #77 "Prevention of the Tb spread" of the June 18, 2001 (amended in 2013), "patients with contagious Tb, repeatedly violating the anti-epidemic regime, and those evading examinations for Tb *or* the therapy, are hospitalized for obligatory examination and treatment." It is specified by the same Law that the principle of informed consent is not applicable under these circumstances, and that Tb patients must undergo prescribed examination and chemotherapy. The non-observance of this law may lead to a criminal persecution. A survey in Russian hospitals found more than 6000 legal proceedings in the

 doi:10.20944/preprints202401.0961.v1

period 2004-2008 whereas 3163 Tb patients were compulsorily hospitalized.[122] In one series, 463 judicial cases resulted in 421 decisions to hospitalize Tb patients.[123] Compulsory treatments are generally in disagreement with the international practice and regulations. According to The World Medical Association, neither the statutory exceptions to the principle of informed consent nor the conditions of required care allow legally binding measures against patients refusing a treatment or hospitalization.[124] The consent for invasive procedures and chemotherapy is of particular importance in conditions where an overtreatment may occur.[3]

According to official instructions, indications for surgery were more frequent in alcohol-dependent than in other Tb patients.[125] In case of alcoholism, the surgical treatment was recommended to be implemented earlier, after a shorter period of medical therapy.[99] Perelman et al. insisted on early surgery in Tb patients with alcohol dependence, and operated them also in the absence of demonstrable Tb infection (e.g. a series of 49 patients with tuberculoma plus 41 with cavernous Tb, whereas *micobacteria* were demonstrated in 55). At the same time, it was noticed that alcoholics have more frequent post-surgery complications.[126] Bronchoscopy was applied in cases with bronchitis,[127] the latter being frequent among alcoholics in Russia due to smoking and the risk to sleep down at a cold place. Along with other complications, vocal cord injuries were observed after repeated bronchoscopies sometimes performed in conditions of insufficient procedural quality. It was noticed that vomiting triggered by apomorphine as aversive therapy of alcohol dependence provoked hemoptysis in patients with Tb.[127]

The following treatments were applied to alcoholics: prolonged intravenous drip infusions, sorbent haemoperfusion, pyrotherapy with sulfozine, endoscopic and surgical biopsies of internal organs without clear indications, also for research.[127-133] Infusions for the purpose of detoxification were generally recommended for patients with alcoholism including moderately severe withdrawal syndrome: 7-10 infusions daily, sometimes combined with intramuscular injections.[132-136] The detoxification was regarded to be "indicated to nearly all alcohol-depended patients, especially to those with prolonged withdrawal syndrome."[127] Analogous recommendations were found in recent instructive publications.[137,138] Some methods were patented e.g. infusion therapy and transcerebral electrophoresis of magnesium as a treatment of alcohol withdrawal syndrome.[135,139-141] Of note, as per the Cochrane review, there is no sufficient evidence to decide whether or not magnesium is useful for the therapy of alcohol withdrawal syndrome.[142] Excessive intravenous supply of magnesium can cause adverse effects. Fatal intravenous overdoses of magnesium in alcoholic patients were recorded.[143] Besides, various intramuscular injections were recommended: magnesium sulphate, sodium bromide and thiosulphate, Unithiol, Dimercaprol; subcutaneous infusions of saline and insufflations of oxygen; extracorporeal ultraviolet irradiation of blood, sorbent hemo- and lymphoperfusion, etc.[125,128,136,144-146]

The recommended duration of the detoxifying treatment including intravenous infusions was 5-12 days, or even 14-21 days according to some instructions.[126,127,147] This is generally at variance with the international practice. Alcohol and its metabolites are eliminated spontaneously while rehydration can be usually attained per os. Long-lasting intravenous infusions are associated with discomfort. It was known that the attitude to alcoholics was less responsible with lower procedural quality assurance. Repeated infusions, endovascular and endoscopic manipulations lead to a transmission of viral hepatitis, unfavourable especially if combined with alcohol-related liver damage. Rudoi et al. (1994) reported that ~60% patients of one "phthisio-narcological" institution for compulsory treatment broke out; over 50% of them were returned by the police.[148] The duration of stay in such institutions was a year or longer.[127] The compulsory treatment has been rooted in laws and regulations.[127,149] In 1974, chronic alcoholism was officially declared to be a ground for enforced treatment; the regulations were made stricter in 1985, making compulsory hospitalization and therapy of chronic alcoholics independent of their anti-social behaviour. This practice was found in the 1990s to be against the human rights.[149] Nonetheless, some writers recommended restoration and further expansion of the compulsory treatment system.[122] According to a survey, 62.6% of specialists in addiction medicine supported compulsory treatment of alcoholism.[150] Enforced therapy of socially

 doi:10.20944/preprints202401.0961.v1

dangerous alcoholics is stipulated by Articles 97 and 98 of the Criminal Code of RF; besides, there is a legal mechanism enabling compulsory treatment of alcoholics in prisons.[151]

Glioblastoma

Around 1980 the author worked as a nurse at the neurosurgery of the Botkin hospital in Moscow. Patients with glioblastoma (Gb) were routinely operated on, while it was believed by some staff that the treatment was generally useless, just forcing many patients to spend the rest of their lives in bed. The directive to apply for gliomas the largest possible radical operations was issued at the 1966 Moscow Conference of Neurosurgeons.[152] Advanced age was not regarded to be an obstacle to the radicalism.[153] Since then, admittedly, microsurgery and other technical advances lead to a reduction in the surgical morbidity. Arguments against resection stem from the invasiveness of Gb, which cannot be totally removed; in addition, there might be a tumor cell migration due to the operation, new neurological deficits and other complications.[154] Surgical excision is not curative of Gb; recurrences occur reportedly after a median of ~13 months.[155] Maximum resection using microsurgical techniques as safely feasible is considered standard of care, although the role of surgery has been difficult to define in controlled clinical trials.[156] The retrospective design of studies has raised concerns about selection bias; that is, some tumours are more resectable than others, and these tumours also may be inherently less aggressive, the impact of surgery being partly an epiphenomenon.[157] It is often argued that a prerequisite of glioma diagnosis is resection or biopsy, both methods being associated with risk. Of note, intracranial malignancy can be diagnosed in some cases by imaging and "liquid biopsy".[158] Improvements of preoperative diagnostics must limit indications for the trepanation.

The volume of residual tumour after surgery negatively correlates with the outcome; however, it has remained unclear whether extent of resection improves the outcome or whether tumours amenable to gross total resection have a different, on average less malignant course.[156] If even surgical outcomes are deemed good, some patients remain with neurocognitive decline or otherwise deterioration of the life quality [6].[159] Although evidence suggests that surgical excision improves the outcome in most cases, it is often associated with morbidity [1].[155] There are indications that standard therapy including surgery may be not in a patient's best interests [7].[160] Without surgery, receiving symptomatic palliative therapy, some patients could use the remaining months to complete their tasks. This letter does not question existing methods of glioma management. It is important that patients (or caregivers if the patient's thinking capacity is impaired) must be objectively informed about potential benefits and adverse effects of different treatments to enable their own decisions. Signed informed consent is mandatory for all surgical candidates [Manrique].[161] Tacit consent must not be supposed, in particular, regarding end-of-life decisions [8].[162] All the above is of importance especially for the elderly. For aged patients with newly diagnosed Gb, current recommendations include surgery; however, the survival is significantly worse than that in younger people [9].[163]

Many patients and their relatives access information on the Internet. The information available online is not monitored [10].[164] In Russia, the media tend to trivialize risks and discomfort associated with surgeries and other invasive procedures. Some medical men on YouTube claim that new techniques enable to remove deep tumours radically without damaging brain structures.[165,166] Unlike other countries, public libraries are rarely used by people and usually contain no professional medical literature. Scientific and especially medical libraries are hindered from using by the general public, including even retired doctors, by unfriendly staff and technical difficulties [11].[167] Some professional publications recommending invasive procedures apply misquoting, for example: "The average life expectancy for malignant gliomas in patients receiving only conservative therapy was 9 weeks – 6.6 months"[168] with references.[169-171] However, in the cited sources[169-171] larger figures are given. Other relevant examples of misquoting were discussed elsewhere.[3,172,173] A propaganda is recognizable, whereas surgeries are often presented e.g. by popular TV series as something a priori beneficial and even as a status symbol, conductive to good convalescence; while side effects, risks and procedural quality are not mentioned. It has been reasonably recommended that medical institutions and

 doi:10.20944/preprints202401.0961.v1

professionals must work to produce more reliable content in order to improve the availability of credible health information for patients [10].[164]

Discussion and conclusion

Factors contributing to the persistence of suboptimal practices include a partial isolation from the international scientific community, insufficient use of the foreign literature, unavailability of many internationally used handbooks,[167] insufficient attention to the needs of some patients e.g. alcohol-dependent and/or elderly, training of medical personnel.[173] Thanks to the Internet, foreign literature is largely available in Russia these days, guidelines being adjusted to international patterns. However, some published instructions have remained without due commentaries, so that a comeback to suboptimal practices is not excluded. The lacking professional autonomy has contributed to the persistence of suboptimal and outdated methods in the healthcare.[173,174] Certain colleagues encountered impediments to their careers when they did not collaborate in dubious research and practice. Trimming of statistics has been not unusual.[173] In conditions of paternalism, misinformation of patients and compulsory treatments are deemed permissible.[175] Suboptimal practices have been used as per instructions by healthcare authorities and leading experts' publications. Numerous examples were discussed previously.[1-3,69,173,176] The following should be mentioned in addition to the topics delineated above: routine cauterization of cervical ectropions without cyto- or histological check for precancerous changes, parabulbar injections of placebos, overuse of bronchoscopy[2] e.g. in conscripts with supposed pneumonia (1478 procedures in 977 patients in one series).[177,178] As mentioned in the Introduction, millions of women in the former SU underwent Halsted mastectomy with removal of *Pectoralis* muscles without evidence-based indications, often without informed consent. Some authors wrote about fascism in oncology [lebedev]. Justifications of surgical hyper-radicalism, described in this review, could be heard in private conversations among medics, for example: "the fatally ill are dangerous" i.e. may commit reckless acts undesirable by the totalitarian state. The training of medical personnel under the imperative of readiness for war has been another motive. Finally, the obstacles to the import of drugs and medical equipment should be mentioned. Domestic products are promoted sometimes despite questionable quality and possible counterfeiting.[173,179] Today, the economical upturn enables acquisition of modern equipment; and scientific research is encouraged by authorities. Under these circumstances, the purpose of this article was to remind that, performing surgical or other invasive procedures, the risk-to-benefit ratio must be kept as low as reasonably achievable.

Conflicts of Interest: The author declares that he has no conflict of interest.

References

1. Jargin SV. Invasive procedures with questionable indications. Ann Med Surg (Lond) 2014; 3(4): 126-9. doi: 10.1016/j.amsu.2014.06.003
2. Jargin SV. Bronchoscopy in children for research with questionable indications: an overview of Russian patents and publications. Recent Pat Drug Deliv Formul 2017; 11(2): 83-88. doi: 10.2174/1872211311666170426093914
3. Jargin SV. Overestimation of medical consequences of low-dose radiation exposures and overtreatment of cancer. J Health Sci Res 2023; doi: 10.25259/JHSR_36_2023
4. Pereslegin IA, Nikitina TP. Surgical, radiation and drug treatment of breast cancer. Med Radiol (Mosk) 1990; 35(6): 39-44.
5. Levin AO, Miasnikova MO. Saving the musculus pectoralis minor in radical mastectomy. Vopr Onkol 1992; 38(1): 80-84.
6. Irov NN. Evaluation of various surgical methods in the treatment of breast cancer. Khirurgiia (Mosk) 1989; (5): 17-19.
7. Letiagin VP. The treatment of primary breast cancer. The late results. Ter Arkh 1992; 64(10): 33-37.
8. Kazachenok VM, Baryash VV. Zabolevaniia molochnoi zhelezy [Breast diseases]. Minsk: Belarusian Medical University, 2005.
9. Kovanov VV, Perelman MI. Operacii na grudnoi stenke i organah grudnoi polosti [Operations on the chest and thoracic cavity organs]. In: Kovanov VV (ed). Operativnaia hirurgia i topograficheskaia anatomia [Operative surgery and topographic anatomy]. Moscow: Meditsina, 2001. pp. 297-321.

10. Semiglazov VV, Topuzov EE. Rak molochnoi zhelezy [Breast cancer]. Moscow: Medpress-inform, 2009.
11. Demidov VP, Pak DD, Ostrovtsev LD. Errors in the treatment of breast cancer. Khirurgiia (Mosk) 1990; (4): 90-95.
12. Kholdin SA, Dymarskii LIu. Rasshirennye radikalnye operacii pri rake molochnoi zhelezy [Extended radical operations in breast cancer]. Leningrad: Meditsina, 1975.
13. Druzhkov BK, Druzhkov OB. The method of extended mastectomy. Patent of Russian Federation RU95106525A1. 1996 December 20.
14. Tsejlikman EG, Patsyrova LA, Vaganov. NV. Method of mastectomy with preservation of greater pectoral muscle. Patent of Russian Federation RU2335249C2. 2008 October 10.
15. Suspitsyn IuV, Letiagin VP, Ivanov VM, Orlova PN. Treatment of breast cancer in middle-aged and elderly menopausal women. Sov Med 1990; (3): 72-76.
16. Kuzin MI, Shkorob OS, Kulakova AM, Bukhteeva NF. Indications for Patey's operation in breast cancer. Khirurgiia (Mosk) 1977; (2): 19-23.
17. Kuzin MI, Shkrob OS, Kulakova AM, Zal'tsman IN, Zolotarevskii VB. Diagnosis and treatment of nonpalpable breast tumors. Vopr Onkol 1981; 27(5): 3-10.
18. Bazhenova AP, Madich KK, Khakhanashvili GN, Sikharulidze AV. Experience in performing the Patey-Dyson operation in cancer of the breast. Khirurgiia (Mosk) 1987; (4): 37-42.
19. Datsenko VS, Abisheva AB. Patey mastectomy in the combined treatment of breast cancer. Vopr Onkol 1977; 23(2): 48-53.
20. Khvastunov RA, Kireev AV, Nikolskiy IV, Suvorov VA. Single-step mastectomy and laparoscopic ovariectomy in the treatment of breast cancer. Journal of Modern Oncology 2007; 9(3): 24-28. https://modernonco.orscience.ru/1815-1434/article/view/26674
21. Bektursynov SM, Bayduvaliev AM. Treatment of breast cancer with the use preoperative radiotherapy. International Journal of Applied and Fundamental Research 2015; (10): 80-83.
22. Yarema VI, Fatuev OE, Stepanyants NG, Safronova VV. Immediate and remote results of surgical interventions on the breast. Research'n Practical Medicine Journal (Issled. Prakt. Med.) 2019; 6(2): 110-9. doi: 10.17709/2409-2231-2019-6-2-11
23. Bukkieva T, Pospelova M, Efimtsev A, Fionik O, Alekseeva T, Samochernych K, et al. Functional network connectivity reveals the brain functional alterations in breast cancer survivors. J Clin Med 2022; 11(3): 617. doi: 10.3390/jcm11030617
24. Galperin EI, Diuzheva TG, Petrovsky PF, ChevokinAYu, Dokuchayev KV, Rabinovich SE, et al. Results of pancreatic blood shunting into the systemic blood flow in insulin-dependent diabetics. HPB Surg 1996; 9(4): 191-7. doi: 10.1155/1996/41904
25. Diuzheva TG. Hirurgicheskoe lechenie bolnyh insulinzavisimym saharnym diabetom [Surgical treatment of patients with insulindependent diabetes mellitus]. Dissertation. Moscow: I.M. Sechenov Medical Academy, 1992.
26. Galperin EI, Diuzheva TG, Rabinovich SE, Platonova LV, Severgina ES, Kuzovlev NF, et al. Distal spleno-renal shunt. A surgical approach to the management of diabetes mellitus patients. Annaly Khirurgicheskoy Gepatologii (Annals of Surgical Hepatology) 1996; (1): 77-90.
27. Nikonenko AS, Kovalev AA, Zavgorodnii SN, Volkova NA. Surgical treatment of insulin-dependent diabetes mellitus and its complications. Khirurgiia (Mosk) 1996; (2): 81-83.
28. Torgunakov SA, Torgunakov AP. Possible causes of thrombus-related hazard of a distal splenorenal venous anastomosis. Angiol Sosud Khir 2010; 16(4): 184-8.
29. Galperin EI, Kuzovlev NF, Diuzheva TG, Aleksandrovskaia TN. Approaches to surgical treatment of diabetes mellitus (experimental study). Khirurgiia (Mosk) 1983; (1): 13-20.
30. Galperin EI. O sebe vsluh [Aloud about myself]. Moscow: Vidar-M, 2017.
31. Torgunakov AP, Torgunakov SA, Magerramova EF. Method for surgical treatment of diabetes mellitus. Patent of Russian Federation RU2421163C1. 2011 June 20.
32. Putintsev AM, Shraer TI, Sergeev VN, Maslov MG, Strukova OA. Variants of surgical management for severe arterial hypertension combined with type 2 diabetes mellitus. Angiol Sosud Khir 2010; 16(2): 120-5.
33. Kirnus LM, Che V, Makarov NA, Burovkin BA, Shvartsshtein VIa, Kamysheva EP, Mochkaeva LV. Method for surgically treatmet of second type diabetes mellitus. Patent of Russian Federation RU2036610C1. 1995 June 09.
34. Pezzarossa A, Contini S, Bonora E, Marni A, Colotto G, Capocasale E, Butturini U. Glucose tolerance after portacaval shunt in liver cirrhosis. Diabete Metab 1986; 12(4): 197-202.
35. Dittrich H. Der Diabetes mellitus, eine Kontraindikation für portocavale Anastomosenoperationen. Langenbecks Arch Klin Chir Ver Dtsch Z Chir 1964; 308: 594-8.
36. Severgina ES, Ponomarev AB, Diuzheva TG, Shestakova MV, Maiorova EM. Diabetic glomerulonephritis - the first stage of diabetic glomerulopathy. Arkh Patol 1994; 56(4): 44-50.
37. Balalykin DA. Introduction of pathogenic principles of surgical treatment of ulcer disease in Russian surgery. Khirurgiia (Mosk) 2004; (10): 73-78.

38. Afendulov SA, Zhuravlev GIu, Smirnov AD, Krasnolutskii NA. Preventive surgical treatment of ulcer disease. Vestn Khir Im I I Grek 2006; 165(3): 18-23.
39. Potashov LV, Semenov DIu, Ushveridze DG, Osmanov ZKh, Chekmasov IuS, Panina AV. Long-term results of closure of perforated pyloro-duodenal ulcers. Vestn Khir Im I I Grek 2005; 164(5): 40-42.
40. Gostishchev VK, Evseev MA, Golovin RA. Radical operative treatment of perforative gastroduodenal ulcer disease. Khirurgiia (Mosk) 2009; (3): 10-16.
41. Vachev AN, Koryttsev VK, Antropov IV. Method of selecting operation volume in case of perforated ulcers of stomach and duodenum. Patent of Russian Federation RU2506886C1. 2014 February 20.
42. Sazhin IV, Sazhin VP, Bronshtein PG, Savel'ev VM, Nuzhdikhin AV, Klimov DE. Laparoscopic treatment of perforated ulcers. Khirurgiia (Mosk) 2014; (7): 12-16.
43. Chernousov AF, Khorobrikh TV, Bogopolsky PM. Hirurgia iazvennoi bolezni zheludka i dvenadcatiperstnoi kishki [Surgery for gastric and duodenal ulcers]. Moscow: Prakticheskaia medicina, 2016.
44. Pantsyrev IuM, Mikhalev AI, Fedorov ED, Cherniakevich SA. Hirurgicheskoe lechenie oslozhnennoi jazvennoi bolezni [Surgical treatment of complicated ulcer disease]. In: Abakumov MM; Saveliev VS (ed). 80 lekcii po hirurgii [Eighty lectures in surgery]. Moscow: Litterra, 2008. pp. 468-480.
45. Larichev AB, Maiorov MI, Favstov SV, Shalop'ev AG. Clinical-epidemiological aspects of gastric and duodenum ulcer. Vestn Khir Im I I Grek 2014; 173(2): 100-4.
46. Mariyko VA, Romanova NN, Kremyansky MA, Tretyakov VO, Mariyko AV. Current state of elective surgery for peptic ulcer. Khirurgiia (Mosk) 2019; (4): 24-29. doi: 10.17116/hirurgia201904124
47. Vlasov AP. New technologies for stomach resection surgery in atypical conditions. Khirurgiia (Mosk) 2020; (9): 20-27.
48. Iudin SS. Sketches of gastric surgery. Khirurgiia (Mosk) 1991; (9): 152-61.
49. Alexi-Meskishvili V, Konstantinov IE. Sergei S. Yudin: an untold story. Surgery 2006; 139(1): 115-22.
50. Yudin SS. Metodika operacii pri ognestrelnyh perelomah bedra v usloviah sovremennoi voiny [Surgical methods for gunshot hip fractures in modern warfare]. Moscow: Medgiz, 1943.
51. Petrovsky BV. Hirurg i zhizn [The surgeon and life]. Moscow: Meditsina, 1989.
52. Kuzin MI, Chistova MA. The stomach and duodenum. In: Kuzin MI (ed). Hirurgicheskie bolezni [Surgical diseases]. Moscow: Meditsina, 1995. pp. 337-407.
53. Babalich AK. Surgical treatment of patients with duodenal ulcer. Khirurgiia (Mosk) 1999; (7): 19-22.
54. Vachev AN, Korytsev VK, Antropov IV. The choice of resection volume by the combination of perforative duodenal ulcer with other complications of the ulcer disease. Khirurgiia (Mosk) 2013; (11): 29-31.
55. Repin VN, Kostylev LM, Poliakov SN, Matveeva NA. Choice of the operation for perforated ulcers of the stomach and duodenum. Vestn Khir Im I I Grek 2011; 170(2): 48-51.
56. Komarov NV, Maslagin AS, Komarov RN. Surgical treatment of patients with complications of peptic ulcer of the stomach and duodenum under conditions of a regional hospital. Vestn Khir Im I I Grek 2001; 160(2): 104-6.
57. Chung KT, Shelat VG. Perforated peptic ulcer - an update. World J Gastrointest Surg 2017; 9(1): 1-12. doi: 10.4240/wjgs.v9.i1.1
58. Babichev SI, Kharlampovich SI, Tarasova LB, Smakov GM, Savchenko ZI. Partial denervation of the lungs in bronchial asthma. Khirurgiia (Mosk) 1985; (4): 31-35.
59. Health Ministry of RSFSR. Pokazania i protivopokazania k operativnomu lecheniu bronhialnoi astmy [Indications and contraindications for the surgical treatment of bronchial asthma]. Moscow, 1988.
60. Gudovskii LM, Karashurov SE, Karashurov ES, Volkov AA, Parshin VD. Surgical treatment of bronchial asthma. Khirurgiia (Mosk) 2002; (7): 14-18.
61. Smakov GM. Complications of surgical treatment of patients with bronchial asthma. Khirurgiia (Mosk) 1990; (2): 124-7.
62. Meshalkin EN, Al'perin LIa. Razlichnye metody denervacii legkih v hirurgii bronhial'noj astmy [Various methods of lung denervation in bronchial asthma surgery]. Tashkent: Meditsina; 1978.
63. Meshalkin EN. 1st attempts of surgical treatment of bronchial asthma by the pulmonary autotransplantation method. G Ital Mal Torace 1968; 22: 15-22. (in Italian)
64. Giller BM, Giller DB, Giller GV. New methods of the surgical treatment of bronchial asthma. Probl Tuberk 1998; (4): 60-61.
65. Smakov GM. Pathogenetic substantiation of lung denervation in bronchial asthma and it's indications. Khirurgiia (Mosk) 1999; (2): 67-69.
66. Uglov FG. Patogenez, klinika i lechenie hronicheskoi pnevmonii [Pathogenesis, clinic and therapy of chronic pneumonia]. Moscow: Meditsina, 1976.
67. Sokolov SN, Gerasin VA, Moiseev NV, Leont'ev AI. Results of lung resections in bronchial asthma. Grudn Khir 1975; (1): 105-8.
68. Uglov FG. Pod beloi mantiei [Under the white mantle]. Moscow: Sovietskaia Rossia, 1984.

69. Jargin SV. Surgery without sufficient indications: an update from Russia. J Surgery 2022; 10(1): 1-9. doi: 10.13188/2332-4139.1000052
70. Perelman MI. Surgery of pulmonary tuberculosis. Probl Tuberk 1998; (3): 27-32.
71. Ots ON, Sinitsyn MV, Semenov GI, Latyshev AN, Agkatsev TV, Kessel' MM. Surgery for respiratory tuberculosis at the Research Institute of Phthisiopulmonology, I. M. Sechenov Moscow Medical Academy: History and current trends. Tuberk Biolezni Legkih 2009; (12): 11-21.
72. Kucherov AL. Osnovnye etapy razvitia ftiziohirurgii v RSFSR [Main developmental steps of the phthisiatric surgery in the RSFSR]. In: Problemy legochnoi hirurgii. K 70-letiju prof. L.K. Bogush'a [Problems of the lung surgery (to the 70th anniversary of Prof. L.K. Bogush)]. Moscow: Central Institute of Tuberculosis, 1975. pp. 93-99.
73. Bogush LK, Kalinichev GA. Korrigiruiushhie operacii pri rezekcii legkih [Corrective operations at lung resections]. Tbilisi: Sabchota Sakartvelo, 1979.
74. Lichterman B. Mikhail Izrailevich Perelman. BMJ 2013; 346: f3042.
75. Perelman MI, Streltsov VP, Naumov VN. Klinicheskie i socialnye aspekty organoshhadiashhih operacii na legkih pri tuberkuleze [Clinical and social aspects of organ-preserving lung surgery in tuberculosis]. In: Perelman MI (ed.) Organoshhadjashhie operativnye vmeshatelstva vo ftiziopulmonologii [Organ-Preserving Operations in Phthisio-pulmonology]. Moscow: Scientific Center for Phthisio-Pulmonology, 1989. pp. 4-6.
76. Nechaeva OB. Tuberculosis situation in Russia. Tuberk Biolezni Legkih 2018; (8): 15-24. doi: 10.21292/2075-1230-2018-96-8-15-24
77. Shilova MV, Khruleva TS, Tsybikova EB. Surgical aid to patients with respiratory tuberculosis. Probl Tuberk Bolezn Legk 2005; (5): 31-36.
78. Olcmen A, Gunluoglu MZ, Demir A, Akin H, Kara HV, Dincer SI. Role and outcome of surgery for pulmonary tuberculosis. Asian Cardiovasc Thorac Ann 2006; 14: 363-6. doi: 10.1177/021849230601400503
79. Dewan RK, Pezzella AT. Surgical aspects of pulmonary tuberculosis: An update. Asian Cardiovasc Thorac Ann 2016; 24: 835-46. doi: 10.1177/0218492316661958.
80. Ahuja SD, Ashkin D, Avendano M, Banerjee R, Bauer M, Bayona JN, et al. Multidrug resistant pulmonary tuberculosis treatment regimens and patient outcomes: An individual patient data metaanalysis of 9,153 patients. PLOS Med 2012; 9: e1001300. doi: 10.1371/journal.pmed.1001300
81. Jargin SV. Cardiovascular mortality trends in Russia: Possible mechanisms. Nat Rev Cardiol 2015; 12: 740. doi: 10.1038/nrcardio.2015.166
82. Leon DA, Chenet L, Shkolnikov VM, Zakharov S, Shapiro J, Rakhmanova G, et al. Huge variation in Russian mortality rates 1984-94: Artefact, alcohol, or what? Lancet 1997; 350: 383-8. doi: 10.1016/S0140-6736(97)03360-6
83. Kibrik BS, Bukharin PA. Rehabilitation of patients following pulmonary resections for tuberculosis. Probl Tuberk 1976; (12): 43-47.
84. Perelman MI, Strelzov VP. Surgery for pulmonary tuberculosis. World J Surg 1997; 21(5): 457-67. doi: 10.1007/pl00012270
85. Giller DB, Bizhanov AB, Khasanshin GS, Trishina LV, Klestova AA. Treatment of the newly diagnosed destructive lung tuberculosis with elimination of bacilli. Khirurgiia (Mosk) 2013; (6): 83-87.
86. Kiseleva IA. Clinical aspects and results of surgical treatment of metatuberculous changes of the lungs. Probl Tuberk 1976; (12): 31-35.
87. Meladze GD. K voprosu rezekcii legkih pri rasprostranennom tuberkuleze [On the lung resection in extended tuberculosis]. In: Problemy legochnoi hirurgii. K 70-letiju prof. L.K. Bogush'a [Problems of the lung surgery (to the 70th anniversary of Prof. L.K. Bogush)]. Moscow: Central Institute of Tuberculosis, 1975. pp. 406-410.
88. Priimak AA. Znachenie hirurgicheskih metodov v kompleksnoi terapii tuberkuleza [Significance of surgical methods in the combined therapy of tuberculosis]. In: Perelman MI (ed.) Organoshhadjashhie operativnye vmeshatelstva vo ftiziopulmonologii [Organ-Preserving Operations in Phthisio-pulmonology]. Moscow: Scientific Center for Phthisio-Pulmonology, 1989. pp. 7-8.
89. Perelman MI, Naumov VN, Dobkin VG, Strel'tsov VP, Dubrovskii AV. Indication for the surgery in patients with pulmonary tuberculosis. Probl Tuberk 2002; (2): 51-55.
90. Motus IY, Skorniakov SN, Golubev DN, Karskanova SS, Malceva AS. Surgical treatment of pulmonary tuberculosis. Vestnik Ural'skoi Meditsinskoi Akademicheskoi Nauki (Journal of Ural Medical Academic Science) 2009; (3): 103-6. https://www.elibrary.ru/item.asp?id=12877524
91. Giller DB, Mishin VI. Ftiziatriia [Phthisiology]. Moscow: Geotar-Media, 2020.
92. Marfina GY, Vladimirov KB, Avetisian AO, Starshinova AA, Kudriashov GG, Sokolovich EG, Yablonskii PK. Bilateral cavitary multidrug- or extensively drug-resistant tuberculosis: role of surgery. Eur J Cardiothorac Surg 2018; 53(3): 618-24. doi: 10.1093/ejcts/ezx350
93. Yablonskii PK, Kudriashov GG, Avetisyan AO. Surgical resection in the treatment of pulmonary tuberculosis. Thorac Surg Clin 2019; 29: 37-46. doi: 10.1016/j.thorsurg.2018.09.003

94. Kempker RR, Vashakidze S, Solomonia N, Dzidzikashvili N, Blumberg HM. Surgical treatment of drug-resistant tuberculosis. Lancet Infect Dis 2012; 12: 157-66. doi: 10.1016/S1473-3099(11)70244-4
95. Benito P, Vashakidze S, Gogishvili S, Nikolaishvili K, Despuig A, Tukvadze N, et al. Impact of adjuvant therapeutic surgery on the health-related quality of life of pulmonary tuberculosis patients. ERJ Open Res 2020; 6: 1-11. doi: 10.1183/23120541.00083-2020
96. Giller DB, Martel II, Baryshnikova LA. Hirurgia tuberkuleza u detei [Surgery of Tuberculosis in Children]. Moscow: Aldi-Print, 2016.
97. Uspenskii LV, Romanychev IuA, Kodolova IM, Chistov LV, Ablitsov IuA. Diagnosis and treatment of pulmonary tuberculomas. Khirurgiia (Mosk) 1986; (5): 11-15.
98. Gur'ianov VN, Strel'tsov VP, Al'ba MN. Early surgical treatment of new restrictive forms of pulmonary tuberculosis. Probl Tuberk 2000; (6): 48-51.
99. Pilipchuk NS, Kharchenko EF, Ivaniuta OM. Tuberkulemy legkih, plevry i sredostenia [Tuberculoma of the lungs, pleura and mediastinum]. Kiev: Zdorov'ia, 1974.
100. Valiev RS, Valiev NR, Iksanov IY, Filatova MS. Epidemical importance of lung tuberculoma, the efficiency of their surgical and non-surgical treatment based on data from the Republic of Tatarstan. Probl Tuberk Bolezn Legk 2014; (4): 18-21.
101. Slepukha IM. Primenenie hirurgicheskih metodov lechenija tuberkuleza legkih v vozrastnom aspekte [The use of surgical treatment of pulmonary tuberculosis in the age aspect]. In: Problemy legochnoi hirurgii. K 70-letiju prof. L.K. Bogush'a [Problems of the lung surgery (to the 70th anniversary of Prof. L.K. Bogush)]. Moscow: Central Institute of Tuberculosis, 1975. pp. 127-134.
102. Health Ministry of Uzbek SSR. Ekonomnye i kombinirovannye rezekcii legkih pri rasprostranennyh formah tuberkuleza [Sparing and Combined Lung Resections in Extended Forms of Tuberculosis]. Methodical Recommendations. Tashkent, 1983.
103. Porkhanov VA, Mova VS, Poliakov IS, Grebennikov SV, Marchenko LG. Surgical treatment of bilateral pulmonary tuberculosis. Probl Tuberk 1998; (1): 36-39.
104. Repin IM. Repeated pneumonectomy in recurrence of pulmonary tuberculosis. Probl Tuberk 1990; (1): 35-39.
105. Andrenko AA, Krasnov VA, Grishchenko NG. Surgical treatment of patients with advanced bilateral destructive pulmonary tuberculosis. Probl Tuberk 2000; (3): 32-35.
106. Ots ON. The surgical treatment of pulmonary tuberculosis with the resistance of mycobacteria to drugs. Sechenov Medical Journal 2012; (2): 15-23. https://www.elibrary.ru/item.asp?id=21947449
107. Kulbak VA, Lakomkin MM, Martirosjan NL. Abstract 196. The peculiarities of the surgical treatment of drug resistant pulmonary tuberculosis. In: Abrosimov VN (ed). Abstract book. 3rd Congress of European region. International Union against Tuberculosis and Lung diseases (IUATLD). 14th National Congress of Lung diseases; 2004 June 22-26; Russia. Moscow: Pulmonology, 2004. p. 55.
108. Zyskin LI, Kozello NA, Grishin MN, Bereza RA. Early operations in pulmonary tuberculosis. Probl Tuberk 1991; (3): 36-38.
109. Sokolov SB. Surgical treatment of aged tuberculosis patients. In: Problemy legochnoi hirurgii. K 70-letiju prof. L.K. Bogush'a [Problems of the lung surgery (to the 70th anniversary of Prof. L.K. Bogush)]. Moscow: Central Institute of Tuberculosis, 1975. pp. 103-110.
110. Gorovenko GG, Sokolov SB, Slepukha IM. Hirurgicheskoe lechenie zabolevanii legkih u bolnyh pozhilogo vozrasta [Surgical Treatment of Lung Diseases in Elderly Patients]. Kiev: Zdorov'ia, 1975.
111. Polianskii VK. The surgical treatment of pulmonary tuberculosis. Voen Med Zh 1999; 320: 42-45.
112. Sokolov EA. Surgical treatment of pulmonary tuberculosis patients over 60. Probl Tuberk 1978; (7): 23-27.
113. El'kin AV, Repin IM, Levashev IN. Surgical treatment for postoperative recurrent pulmonary tuberculosis. Probl Tuberk Bolezn Legk 2004; (2): 28-32.
114. Korneevskii MD. Bilateral lung resections in tuberculosis patients. In: Problemy legochnoi hirurgii. K 70-letiju prof. L.K. Bogush'a [Problems of the lung surgery (to the 70th anniversary of Prof. L.K. Bogush)]. Moscow: Central Institute of Tuberculosis, 1975. pp. 376-384.
115. Kravchenko AF, Vinokurov II, Ivanov IuS, O-zhi-kho EA. A case of multiple operations in pulmonary tuberculosis. Probl Tuberk Bolezn Legk 2003; (5): 48-49.
116. Niiazov IB. Bilateral resection in patients with tuberculosis associated with nonspecific lung diseases. Probl Tuberk 1976; (12): 29-31.
117. Ots ON. Bilateral lung resections. Grud Serdechnososudistaia Khir 1991; (11): 35-38.
118. Bogush LK, Kariev TM, Eshankhanov M. Hirurgia tiazhelyh form tuberkuleza legkih [Surgery of Severe forms of Pulmonary Tuberculosis]. Tashkent: Meditsina, 1983.
119. Naumov VN, Karaeva GB. Surgical treatment of patients with disseminated and progressing pulmonary tuberculosis. Probl Tuberk 1993; (5): 23-26.
120. Fedorov IA, Wilson SJ, Davies DE, Holgate ST. Epithelial stress and structural remodelling in childhood asthma. Thorax 2005; 60: 389-94. doi: 10.1136/thx.2004.030262

121. Bogadel'nikova IV, Sagalovich VIa, Perelman MI. The efficacy of the ambulatory treatment of patients with newly detected pulmonary tuberculosis. Probl Tuberk 2000; (5): 23-28.
122. Bogorodskaia EM, Ol'khovatskii EM, Borisov SE. Legal aspects of compulsory hospitalization of incompliant patients with tuberculosis. Probl Tuberk Bolezn Legk 2009; (4): 8-14.
123. Lomova LA, Kopylova IF, Smerdin SV, Chernov MT, Baeva LB, Saranchina SV. Compulsory hospitalization of non-compliant patients with tuberculosis. Tuberk Biolezni Legkih 2009; (7): 9-13.
124. Bouvet R, Le Gueut M. Tuberculose et refus de soins: recours à la législation sur les menaces sanitaires graves. Rev Mal Respir 2013; 30: 451-7. doi: 10.1016/j.rmr.2013.02.019
125. Pilipchuk NS, Melnik VP, Petrova IE. Osobennosti vyиavlenija, diagnostiki, klinicheskogo techenia, lechenia i profilaktiki tuberkuleza u bolnyh hronicheskim alkogolizmom [Special features of detection, diagnosis, clinical course, treatment and prevention of tuberculosis in patients with chronic alcoholism]. Methodical Recommendations. Kiev: Health Ministry of Ukrainian SSR, 1987.
126. Perelman MI, Safarov RN, Epshtein TV, Gorelik ES, Palei ME. Hirurgicheskoe lechenie bolnyh tuberkulezom legkih i hronicheskim alkogolizmom [Surgical treatment of patients with pulmonary tuberculosis and chronic alcoholism]. In: Sovremennye metody hirurgicheskogo lechenia tuberkuleza legkih [Modern methods of surgical treatment of pulmonary tuberculosis]. Collected works. Moscow: Institute of Tuberculosis, 1983. pp. 65-67.
127. Entin GM. Lechenie alkogolizma [Treatment of alcoholism]. Moscow: Meditsina, 1990.
128. Gavrilenko VS. Kompleksnoe lechenie bolnyh tuberkulezom legkih, stradaiushhih alkogolizmom [Combined treatment of patients with pulmonary tuberculosis suffering of alcoholism]. Methodical Recommendations Moscow: Health Ministry of RSFSR, 1989.
129. Makhov VM, Abdullin RG, Gitel' EL, Zavodnov VIa, Podzolkov VI, Sozinova TIu, et al. Visceral lesions in alcoholism. Ter Arkh 1996; 68(8): 53-56.
130. Krut'ko VS. Pneumonia in patients with pulmonary tuberculosis and alcoholism. Probl Tuberk 1990; (1): 64-66.
131. Jargin SV. Magnesium Supplementation with Special Reference to Alcohol-Related Conditions: Experience from Russia. Future Integrative Medicine 2022; 1: 38-42. doi: 10.14218/FIM.2022.00016.
132. Ivanets NN, Vinnikova MA. Alkogolizm [Alcoholism]. Moscow: MIA, 2011.
133. Shabanov PD. Narkologia [Narcology]. 2nd edition. Moscow: Geotar-Media, 2015.
134. Annex to the Order of the Health Ministry of Russian Federation No. 140. updated 1998 April 28. Available from: http://docs.cntd.ru/document/1200119087. Accessed January 02, 2024.
135. Galankin LN, Livanov GA, Guzikov BM, Volkov NIu. Method fordetermining treatment tactics in the cases of alcohol abstinence syndrome. Patent of Russian Federation RU2202946C2. 2003 April 27.
136. Nikitin IuP. Profilaktika i lechenie alkogolizma [Prevention and treatment of alcoholism]. Kiev: Zdorov'ia, 1990.
137. Gromova OA, Torshin IYu. Magnii i "bolezni civilizacii" [Magnesium and diseases of civilization]. Moscow: Geotar-Media, 2018.
138. Vinnikova MA, Krenkel NT, Tikov MS, Tsareva IS. Sovremennye podhody k lecheniiu tiazhelogo alkogolnogo abstinentnogo sindroma. Metodicheskie rekomendacii [Modern approaches to the treatment of severe alcohol withdrawal syndrome (guidelines)]. Moscow: Research and Practical Centre for Narcology, 2018.
139. Sosin IK, Sema VI, Gurevich YL, Mysko GN, Slabunov OS, Palamarchuk VM, et al. Method of stopping alcohol abstinence syndrome. Patent of Soviet Union SU1299590A1. 1987 March 30.
140. Panin LE. Method of treatment of patients with chronic alcoholism. Patent of Russian Federation RU2145216C1. 2000 February 10.
141. Chitalov VG, Zhukova NE. Method of alcoholic abstinence syndrome reduction. Patent of Russian Federation RU2327474C1. 2008 June 27.
142. Sarai M, Tejani AM, Chan AH, Kuo IF, Li J. Magnesium for alcohol withdrawal. Cochrane Database Syst Rev 2013; (6): CD008358. doi: 10.1002/14651858.CD008358.pub2
143. Vissers RJ, Purssell R. Iatrogenic magnesium overdose: two case reports. J Emerg Med 1996; 14: 187-91. doi: 10.1016/0736-4679(95)02115-9.
144. Syropiatov OG, Dzeruzhynskaia NA. Patogenez i biologicheskoe lechenie alkogolizma [Pathogenesis and biological therapy of alcoholism]. Kiev: Military Medical Academy, 2000.
145. Garbusenko ON, Babashev BB, Salahanov RA. Ultraviolet irradiation of bloodin therapy of acute alcohol abstinence syndrome. Efferent Therapy 2013; 19(1): 98-99.
146. Styagov GI, Timoshok AI. Medikamentoznye i nemedikamentoznye metody lechenia bolnyh alkogolizmom v LTP [Medical and non-medical treatment methods of alcoholic patients in LTP (labor-and-treatment prophylactoriums)]. In: Aktual'nye voprosy i polozhitel'nyi opyt organizacii psihiatricheskoi i narkologicheskoj pomoshhi v ITU i LTP [Current issues and positive experience in organizing psychiatric and drug addiction care in correctional institutions and LTPs (selected articles)]. Domodedovo: Ministry of Internal Affairs of the Russian Federation, 1991. p. 54-62.

147. Filatov AT, Tabachnikov SI. Prinuditelnoe lechenie pri alkogolizme [Compulsory treatment for alcoholism]. Kiev: Zdorov'ia, 1976.
148. Rudoi NM, Dzhokhadze VA, Chubakov TCh, Stadnikova AV. Current status and perspectives in hospital treatment of patients with tuberculosis complicated with alcohol abuse. Probl Tuberk 1994; (4): 8-10.
149. Grishko AIa. Pravovye i kriminologicheskie problemy socialnoi reabilitacii hronicheskih alkogolikov i narkomanov [The institute of compulsory treatment and occupational re-education of chronic alcoholics and drug addicts, its social purpose]. Moscow: Academy of the Ministry of Internal Affairs, 1991.
150. Mendelevich VD. Etika sovremennoi narkologii [Ethics of modern narcology]. Moscow: Gorodets, 2016.
151. Maslennikova EA. Osobennost ispolneniia lisheniia svobody osuzhdennymi, bolnymi alkogolizmom [Peculiarities of execution of imprisonment by convicts with alcoholism]. Ryazan: IP Konyakhin A.V., 2023.
152. Zozulya IuA, Rudchenko VV, Shcheglov VI. Hirurgicheskoe lechenie supratentorialnyh gliom metodom rezekcii dolei mozga vmeste s opuholiu [Surgical treatment of supratentorial gliomas by resection of the brain lobes along with the tumor]. In: Hirurgicheskoe lechenie opuholei golovnogo mozga. Problemy neirohirurgii. Respublikanskii mezhvedomstvennyi sbornik [Surgical treatment of brain tumors. Problems of neurosurgery. Republican interdepartmental collection]. Vol. 1. Kiev: Zdorov'ia, 1968; pp. 50-59.
153. Taleisnik SL. Nekotorye osobennosti hirurgicheskih vmeshatelstv pri opuholiah golovnogo mozga u lic starshe 50 let [Some features of surgical interventions for brain tumors in people over 50 years of age]. In: Hirurgicheskoe lechenie opuholei golovnogo mozga. Problemy neirohirurgii. Respublikanskii mezhvedomstvennyi sbornik [Surgical treatment of brain tumors. Problems of neurosurgery. Republican interdepartmental collection]. Vol. 1. Kiev: Zdorov'ia, 1968; pp. 174-180.
154. Iacob G, Dinca EB. Current data and strategy in glioblastoma multiforme. J Med Life 2009; 2: 386-93.
155. Youngblood MW, Stupp R, Sonabend AM. Role of resection in glioblastoma management. Neurosurg Clin N Am 2021; 32(1): 9-22. doi: 10.1016/j.nec.2020.08.002.
156. Weller M, Le Rhun E, Preusser M, Tonn JC, Roth P. How we treat glioblastoma. ESMO Open 2019; 4(Suppl 2): e000520. doi: 10.1136/esmoopen-2019-000520
157. Schiff D, Van den Bent M, Vogelbaum MA, Wick W, Miller CR, Taphoorn M, et al. Recent developments and future directions in adult lower-grade gliomas: Society for Neuro-Oncology (SNO) and European Association of Neuro-Oncology (EANO) consensus. Neuro Oncol 2019; 21(7): 837-53. doi: 10.1093/neuonc/noz033
158. Balana C, Castañer S, Carrato C, Moran T, Lopez-Paradís A, Domenech M, et al. Preoperative diagnosis and molecular characterization of gliomas with liquid biopsy and radiogenomics. Front Neurol 2022; 13: 865171. doi: 10.3389/fneur.2022.865171
159. Bonosi L, Marrone S, Benigno UE, Buscemi F, Musso S, Porzio M, et al. Maximal safe resection in glioblastoma surgery: a systematic review of advanced intraoperative image-guided techniques. Brain Sci 2023;13(2):216. doi: 10.3390/brainsci13020216
160. Walker DG, Kaye AH. Diagnosis and management of astrocytomas, oligodendrogliomas and mixed gliomas: a review. Australas Radiol 2001; 45(4): 472-82. doi: 10.1046/j.1440-1673.2001.00959.x
161. Manrique-Guzmán S, Herrada-Pineda T, Revilla-Pacheco F. Surgical Management of Glioblastoma. In: De Vleeschouwer S (ed.) Glioblastoma. Brisbane: Codon Publications, 2017; Chapter 12.
162. Berthold D, Carrasco AP, Uhl E, Müller H, Dumitrascu R, Sibelius U, et al. Palliative care of older glioblastoma patients in neurosurgery. J Neurooncol 2022; 157(2): 297-305. doi: 10.1007/s11060-022-03985-x
163. Minniti G, Lombardi G, Paolini S. Glioblastoma in elderly patients: current management and future perspectives. Cancers (Basel) 2019; 11(3): 336. doi: 10.3390/cancers11030336
164. ReFaey K, Tripathi S, Yoon JW, Justice J, Kerezoudis P, Parney IF, et al. The reliability of YouTube videos in patients education for glioblastoma treatment. J Clin Neurosci 2018; 55: 1-4. doi: 10.1016/j.jocn.2018.07.001
165. Otzyv pacienta: udalenie opuholi golovnogo mozga slozhnoi lokalizacii [Patient's comment: removal of a brain tumor of complex localization] https://www.youtube.com/watch?v=-0GLCfdMv10 (accessed January 11, 2024)
166. Voprosy vrachu. Glioma [Questions for the doctor. Glioma]. https://www.youtube.com/watch?v=l2kSeb92jpY (accessed January 11, 2024)
167. Murphy J, Jargin S. International trends in health science librarianship part 20: Russia. Health Info Libr J 2017; 34: 92-94. doi: 10.1111/hir.12172
168. Martynov BV, Kholiavin AI, Parfenov VE, Nizkovolos VB, Trufanov GE, Fokin VA, et al. Technique of stereotactic cryodestruction in management of patients with cerebral gliomas. Vopr Neirokhir Im NN Burdenko 2011; 75(4): 17-24.
169. Fazeny-Dörner B, Wenzel C, Veitl M, Piribauer M, Rössler K, Dieckmann K, Ungersböck K, Marosi C. Survival and prognostic factors of patients with unresectable glioblastoma multiforme. Anticancer Drugs 2003; 14(4): 305-12. doi: 10.1097/00001813-200304000-00008

170. Kreth FW, Warnke PC, Scheremet R, Ostertag CB. Surgical resection and radiation therapy versus biopsy and radiation therapy in the treatment of glioblastoma multiforme. J Neurosurg 1993; 78(5): 762-6. doi: 10.3171/jns.1993.78.5.0762
171. Simpson JR, Horton J, Scott C, Curran WJ, Rubin P, Fischbach J, Isaacson S, Rotman M, Asbell SO, Nelson JS, et al. Influence of location and extent of surgical resection on survival of patients with glioblastoma multiforme: results of three consecutive Radiation Therapy Oncology Group (RTOG) clinical trials. Int J Radiat Oncol Biol Phys 1993; 26(2): 239-44. doi: 10.1016/0360-3016(93)90203-8
172. Jargin SV. Unfounded statements tending to overestimate Chernobyl consequences. J Radiol Prot 2013; 33(4): 881-4. https://doi.org/10.1088/0952-4746/33/4/L01
173. Jargin SV. Misconduct in medical research and practice. New York: Nova Science Publishers, 2020. doi: 10.52305/GIEZ3244
174. Danishevski K, McKee M, Balabanova D. Variations in obstetric practice in Russia: a story of professional autonomy, isolation and limited evidence. Int J Health Plann Manage 2009; 24: 161-71. doi: 10.1002/hpm.934
175. Mikirtichan GL, Kaurova TV, Pestereva EV. Vvedenie v bioetiku [Introduction to bioethics]. St. Petersburg: Pediatric Medical University, 2022.
176. Jargin SV. Some aspects of renal biopsy for research. Int J Nephrol Kidney Failure 2015; 1(2): 1-5. doi: 10.16966/2380-5498.108
177. Ismagilov NM. Oslozhnennaia vnebol'nichnaia pnevmonia u lic molodogo vozrasta iz organizovannyh kollektivov: kliniko-morfologicheskaja kartina, diagnostika i lechenie [Complicated community-acquired pneumonia in young people from organized groups: clinical and morphological picture, diagnosis and treatment]. Dissertation. Samara University, 2009.
178. Kazantsev VA. Abstract 1358. The use of bronchological sanation for treatment of community-acquired pneumonia. nity-acquired pneumonia. In: Abrosimov VN, et al. (eds.) Abstract book. 3rd Congress of European region. International Union against Tuberculosis and Lung diseases (IUATLD). 14th National Congress of Lung diseases; 2004 June 22-26; Russia. Moscow: Pulmonology, 2004. p. 361.
179. Jargin SV. Barriers to the importation of medical products to Russia: in search of solutions. Healthcare in Low-resource Settings 2013; 1: e13. doi: 10.4081/hls.2013.e13