



**BARIATRIK JARROHLIK AMALIYOTIDAN SO'NG JIGARDA  
MORFOFUNKSIONAL O'ZGARISHLARI VA ULAR BILAN BOG'LIQ  
KASALLIKLAR (ADABIYOTLAR SHARHI)**

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**Annotatsiya:** *Alkogolsiz yog'li gepatoz jigar kasalligi (NAFLD) semizlik bilan og'rgan bemorlarning 80 % gacha qismida uchraydi. So'nggi yillardagi ma'lumotlar NAFLDning bariatrik jarrohlik amaliyotlaridan keyin sezilarli darajada yaxshilanishini ko'rsatmoqda. Ushbu adabiyotlar sharhida mini-gastrobypass jarrohligidan keyin bemorlarda jigar morfofunkSIONal o'zgarishlari tahlil qilindi va mavjud manbalar asosida umumlashtirildi.*

**Kalit so'zlar:** *mini-gastrobypass; gastrik bypass jarrohligi; tana vaznini kamaytirish; jigar funkSIONal buzilishi.*

## **KIRISH**

Semizlik va unga hamroh bo'ladigan metabolik sindrom hozirgi kunda global sog'liqni saqlash tizimi uchun jiddiy muammo hisoblanadi. Semizlikning 80 % gacha holatlarida alkogolsiz yog'li jigar kasalligi (NAFLD), shu jumladan alkogolsiz steatohepatit (NASH) rivojlanadi. Bu esa, o'z navbatida, jigar fibrozining og'ir shakllari, sirroz va gepatosellyulyar karsinoma rivojlanishiga olib kelishi mumkin [1]. Hayot tarzini o'zgartirish va tana vaznini kamaytirish NAFLDni davolashda eng samarali usullardan biri sifatida tanilgan bo'lsa-da,



uzoq muddatli vazn nazorati qat'iy intizom va bardoshlilikni talab etadi hamda ko'p hollarda muvaffaqiyatsiz bo'ladi.

So'nggi yillarda bariatrik jarrohlik semizlik bilan bog'liq yurak-qon tomir kasalliklari, qandli diabet, tayanch-harakat tizimi shikastlanishlari va uyqu apnesi kabi uzoq muddatli asoratlarni oldini olish yoki qaytarishda samarali va barqaror tana vaznini kamaytirish usuli sifatida keng qo'llanilmoqda [2]. Muhimi shundaki, bemorlarning aksariyatida bariatrik jarrohlik NAFLD bilan og'rigan shaxslarda jigar steatozini, yallig'lanishini va fibrozini yaxshilaydi [3]. Biroq, 16 % gacha hollarda jigar fibrozining kuchayishi yoki yangi fibroz o'choqlari paydo bo'lishi mumkin. Bu holatlar odatda yengil kechadi, sirroz yoki jigar faoliyatining sezilarli buzilishiga olib kelmaydi [4–10]. Ayrim holatlarda jigar funksiyasi yomonlashgani haqida xabarlar mavjud bo'lib, bu ko'pincha bajarilgan jarrohlik turi, malabsorbsiyaga yoki oziq moddalarning yetishmovchiligiga bog'liq bo'lgan.

Tarixan jejunoileal bypass (JIB) va kamroq darajada biliopankreatik diversiya (BPD) yuqori darajadagi asoratlarni va o'lim ko'rsatkichi bilan bog'liq bo'lgan, ayniqsa jigar funksiyasi nuqtayi nazaridan [11, 12]. Masalan, 453 bemorni kuzatgan tadqiqotda JIBdan keyin 7 % hollarda o'tkir jigar yetishmovchiligi qayd etilgan [13]. Shu sababli bugungi kunda bariatrik jarrohlar JIB amaliyotini bajarishdan voz kechishmoqda.

Hozirda Roux-en-Y gastrik bypass (RYGB) va sleeve gastrektomiya (SG) eng ko'p qo'llaniladigan bariatrik usullar hisoblanadi. Bir anastomozli gastrik bypass (OAGB) yoki omega halqa/mini gastrik bypass esa texnik jihatdan oddiyroq, tana vaznini ortiqcha kamaytirish ko'rsatkichi yuqori bo'lgan va kam asoratlarni bilan kechuvchi yangi usul sifatida ko'rilmog'da [14, 15]. Shu paytgacha OAGB, SG yoki gastrik bandajdan so'ng klinik yoki gistologik jigar buzilishlari haqida ma'lumotlar berilmagan.

### **MUHOKAMA**

Katta meta-tahlilda, 766 bemorda BPD, gastrik bandaj yoki RYGB amaliyotlaridan keyin juft jigar biopsiyasi o'tkazilgan bo'lib, bemorlarning mos ravishda 91,6 %, 81,3 % va 65,5 % qismida steatoz, steatohepatit va fibroz yaxshilangan yoki butunlay yo'qolganligi qayd etilgan [3]. Boshqa tomondan, ushbu protseduralardan keyingi birinchi yilda steatoz va gepatositlarning shishishi kamayishi kuzatilgan bo'lsa-da, 381 bemor ishtirokidagi perspektiv tadqiqotda, 95,7 % bemorda fibroz bahosi  $\leq$  F1 darajasida saqlanganiga qaramay, 5 yil ichida fibroz sezilarli darajada rivojlangan va bu yuqori tana massasining indeksi (BMI) hamda insulinga nisbatan qarshilikning oshishi bilan bog'liq bo'lgan [9]. undan tashqari, jigar gistologiyasida yengil o'zgarishlardan tashqari, kamdan-kam hollarda jigar yetishmovchiligiga olib keluvchi og'ir holatlar va o'limlar asosan JIB yoki BPDdan keyin qayd etilgan



[12]. Aksincha, laparoskopik RYGBdan keyin sezilarli jigar disfunktsiyasi holatlari juda kam uchraydi [23]. Mavjud bilimimizga ko'ra, OAGBning o'rta yoki jiddiy darajadagi jigar funksiyasining buzilishiga olib kelib, jigar transplantatsiyasini talab qiladigan holatlar haqida ma'lumotlar mavjud emas, xususan, bizning tadqiqotimizda kuzatilgan kabi. Bariatrik jarrohlikdan keyingi jigar yomonlashishining asosiy mexanizmlari hozircha to'liq tushunilmagan va prognoz beruvchi o'rnini bosuvchi ko'rsatkichlar mavjud emas. Pure restriktiv usullar, masalan, SG, ilgari mavjud bo'lgan og'ir jigar kasalligi bo'lgan bemorlarda ham qo'llanilishi mumkinligi va samarali ekanligi isbotlangan [24]. Bizning bilimlarimizga ko'ra, SG yoki gastrik bandajdan keyin jiddiy jigar buzilishlari hali qayd etilmagan. Boshqa tomondan, yaqinda o'tkazilgan randomizatsiyalangan tadqiqotda, RYGB o'tkazilgan NASH bilan og'rikan bemorlar SG ga nisbatan jigar funksiyasining dastlabki o'tkir vaqtinchalik yomonlashishiga ko'proq moyil ekanligi aniqlangan [25]. RYGBdan keyin jigar funksiyasining yomonlashuvi, asosan, uzoq chiqarib tashlangan bo'limlar yoki RYGBning distal variantlari bilan bog'liq bo'lishi mumkinligi taklif qilingan [26]. Bizning seriyamizda esa, umumiy kanallar uzunligi median 357,5 sm bo'lib, bu oziq moddalarning yetarlicha so'rilishi uchun yetarli bo'lishi kerak edi. Shunga qaramay, BMI normal diapazonda qolgan bo'lsa-da, median ortiqcha vazn yo'qotish foizi (%EWL) o'rtacha ko'rsatkichdan ancha yuqori edi. Bu shuni ko'rsatadiki, mos kanallar uzunligi har doim ham har bir bemorda to'g'ri so'rilishni ta'minlamaydi. Aslida, ichak shilliq qavatining turlicha moslashuvi mavjudligi taxmin qilinmoqda [27].

RYGB amaliyotidan keyingi salbiy hodisalar ko'pincha oldindan tashxis qilingan sirroz, alkogol ta'siridan kelib chiqqan kasallik va jarrohlik paytidagi asoratlar bilan bog'liq ekanligi ma'lum qilingan [28]. Jigar kasalligining darajasi esa perioperatsion natijalarga ta'sir qilmagan, biroq uzoq muddatli kuzatuvda NASH bilan og'rikan bemorlarda yuqori o'lim darajasi bilan bog'liqligi aniqlangan [29, 30]. 108 bemordan iborat, asosan Child-Pugh A darajasidagi bemorlarda bariatrik jarrohlik natijalarini o'rganilgan tizimli sharhda, ushbu guruhda kasallik va o'lim darajasi oshgani qayd etilgan hamda olti bemorda jigar kasalligining dekompensatsiyasi, to'rt bemorda esa o'tkir fulminant jigar yetishmovchiligi oqibatida o'lim holatlari tasvirlangan [28]. Bu esa oldindan mavjud jigar kasalligi bo'lgan bemorlarning tez vazn yo'qotish yoki malabsorbsion protseduralardan kelib chiqadigan noma'lum omillar tufayli ikkinchi darajali zararga ("second hit") ko'proq moyilligi bor-yo'qligini savol ostiga qo'yadi.

Bizning bemorlar seriyamizda 60 % hollarda bemorlarda oldindan mavjud jigar kasalligi qayd etilganligi hamda umumiy median ortiqcha vazn yo'qotish foizi (%EWL) 110,6 % atrofida bo'lgani, bemorlarning jigar funksiyasining



buzilishiga ta'sir qilgan bo'lishi mumkin. Muhimi, xavfsiz protsedura hisoblangan OAGB besh bemorda jiddiy jigar shikastlanishiga olib kelgan [31]. RYGB yoki OAGBdan keyin umumiy kanal uzunligini cho'zish yoki biliopankreatik (BP) aylantirish amalga oshirilganda, barcha bemorlarda simptomlarning sezilarli yaxshilanishi yoki hatto to'xtatilishi kuzatilgan.

E'tiborlisi, bariatrik jarrohlik vaqtida morbid semizlikdan aziyat chekayotgan bemorlarning 5 % gacha qismida aniqlanmagan sirroz mavjud bo'lishi mumkin [2]. Kasallik belgilarining aniq va o'ziga xos bo'lmasligi hamda jarrohlik paytida makroskopik jigar kasalligi osongina e'tibordan chetda qolishi ehtimoli mavjud [32]. Shuning uchun bariatrik jarrohlikdan oldin ilg'or jigar kasalligining mavjudligi puxta tekshirilishi lozim.

Jigar funksiyasini muntazam kuzatish va postoperatsion diqqat bilan nazorat qilish muhimligi alohida ta'kidlanishi kerak. Ayniqsa, ilgari og'ir/super semizlik, doimiy insulin qarshiligi va oldingi jigar patologiyalari mavjud bo'lgan, shuningdek, asosiy jarrohlikdan mustaqil ravishda yuzaga keladigan tez va keskin vazn yo'qotish holatlari kuzatilgan bemorlarga alohida e'tibor qaratish tavsiya etiladi, chunki kelajakda jigar funksiyasining buzilishiga olib keluvchi omillar aniqlanmaguncha ushbu omillar ustida diqqatli bo'lish zarur.

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