栀!!沱!

咤犏极荸阀咤盗啾痕锃呆棺认冯飞荷蜩澳抓必超!

Ui f!wbmvf!pg!qvmn pobsz!vmusbtpvoe!dpn cjofe!xjui!qvmn pobsz!gvodujpo!jo!ejggfsfoujbm!ejbhoptjt!pg! eztqofb!

月鼾 Xboh!Mpoh!
)伎锻雷郜嚎卑玩吊蛏!!课珲伎锻!!141164*!
GUbjzvbo!Op/5!Qfpqmf(t!Iptqjubm!Ubjzvbo-!Tiboyj!!141164H!

【摘 要】目的 探讨肺超声结合肺功能在鉴别诊断呼吸困难中的价值。方法 将 2021 年 3 月-2022 年 5 月期间我院收治的 24 例肺源性呼吸困难患者（肺源组），23 例心源性呼吸困难患者（心源组），以及同期在我院进行健康体检的 20 例健康者纳入研究（健康组）。给予三组肺超声与肺功能（呼气流量峰值，第一秒呼气量）检查，并对检查结果进行对比。结果肺部超声 LUS 评分肺源组（33.09±2.44 分）>心源组（12.48±1.62 分）>健康组（0.08±0.01 分），组间对比均有统计学意义（P<0.05）。肺功能第一秒呼气量指标水平肺源组（83.68±1.55%）>心源组（74.61±1.37%）>健康组（64.10±1.09%），呼气流量峰值肺源组（128.05±12.62L）<心源组（255.02±33.46L）<健康组（544.25±60.33L），组间对比均有统计学意义（P<0.05）。24 例肺源性呼吸困难患者共检出 18 例（75.00%）结核性胸腔积液并肺不张，4 例（16.66%）肺间质纤维化，2 例（8.33%）肺炎。23 例心源性呼吸困难患者均检出双胸腔积液，14 例（60.87%）左心衰，8 例（34.78%）肺心病至右心衰,1 例（4.35%）扩心病。结论 肺超声与肺功能指标水平检查有助于快速准确鉴别呼吸困难性质，进而为临床进一步干预提供准确数据参考，从而有利于疾病的“早发现、早诊断、早干预”，具备深入研究及推广运用价值。

【Abstract】Objective To explore the value of pulmonary ultrasound combined with pulmonary function in differential diagnosis of dyspnea. Methods 24 patients with pulmonary dyspnea (pulmonary source group), 23 patients with cardiogenic dyspnea (cardiogenic group) and 20 healthy people who had health checkups in our hospital during March 2021 to May 2022 were included in the study (healthy group). The lung ultrasound and pulmonary function (peak expiratory flow, first second expiratory volume) were examined in three groups, and the results were compared. Results Lung ultrasound LUS score was 33.09 ± 2.44 points in the lung source group, 12.48 ± 1.62 points in the heart source group, and 0.08 ± 0.01 points in the healthy group. The comparison between groups was statistically significant (P<0.05). The level of expiratory volume index in the first second of pulmonary function in the pulmonary source group (83.68 ± 1.55%)>the cardiac source group (74.61 ± 1.37%)>the healthy group (64.10 ± 1.09%), and the peak expiratory flow in the pulmonary source group (128.05 ± 12.62L)<the cardiac source group (255.02 ± 33.46L)<the healthy group (544.25 ± 60.33L). The comparison between groups was statistically significant (P<0.05). A total of 18 (75.00%) cases of tuberculous pleural effusion with atelectasis, 4 (16.66%) cases of pulmonary interstitial fibrosis, and 2 (8.33%) cases of pneumonia were detected in 24 patients with pulmonary dyspnea. Double pleural effusion was detected in 23 patients with cardiogenic dyspnea, 14 patients (60.87%) had left heart failure, 8 patients (34.78%) had pulmonary heart disease to right heart failure, and 1 patient (4.35%) had dilated heart disease. Conclusion Pulmonary ultrasound and pulmonary function index level examination are helpful to quickly and accurately identify the nature of dyspnea, and thus provide accurate data reference for further clinical intervention, which is conducive to the "early detection, early diagnosis and early intervention" of diseases, and has the value of in-depth research and popularization.

【关键词】咤犏极 Z 氯喔犏极 Z 咤墟漫冯飞荷蜩 Z 氯墟漫冯飞荷蜩 Z 咤盗啾 Z 冯丸下铢窥超 Z 郜挨冼冯丸铢 Z 锃呆棺认!

【Key words】Lung ultrasound; Cardiac ultrasound; Pulmonary dyspnea; Cardiogenic dyspnea; Lung function; Peak expiratory flow; First second expiratory volume; differential diagnosis

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冯飞荷蜩几八冯飞芒莽侄趾)咤墟漫*泥氯纥壑侄趾)氯墟漫*捏幙! シ饼铭琏爵冯飞荷蜩趾卑开厨搔曼漫多铂搡就仍阀枣跣泉抓无拯-慨螈盾阮抓棺认立安掉瘁厨谏陔搔咤墟漫泥搡搔氯墟漫冯飞荷蜩[2]シ饼搔仄备谁葡扒镰绔酝祗纭棺认 K 碍备痕孛娠搐颅颅蜩蔽佞旧 K 藩阮颁辩烈楝牌犬阮生シ捏蔽蚴绊椁孰趾恩爱播水肃孰罢级-就酚疽肃孰开厨初瘀シ姘祢包肃酚螈琏脸招炝八疾升抓毙憨柢急-搦安肃酚下诖颁鸵炝茬躁-螈炝裰阮疋-捏蔽痕曼漫澳铞漫冯飞荷蜩抓锃呆棺认蔼脸招躲蛎 K 碍大绑侄趾抓VI如多酝ザ如棺认ザ如例箜VIレ鹅级扒镰吊累颁几菜蠼嗜罡 Y 硬ザ喈罡 DU 鄱纫坞祗纭锃呆-肃孰纫坞茬躁安腺昶炝几肃孰阮疋爱猃昶シ社痢拾咤罡犏极抓褴按-痕爵冯飞荷蜩趾卑抓锃呆棺认蔼多撇簇绊铞冀抹霸-好厨碍饼莜纤ザ芸佞ザ纫藏-立安搔捏慑吊拯生士赐躇慑恢婶榜菅涩乘盗啾抓犏极柢急罹啾己祗纭抓螺砝肃孰-捏蔽里缏歧怦铂八扒镰冯飞荷蜩趾卑趾好抓螺砝棺认[3]シ同跳八汽跣冯飞荷蜩棺认疵佞岳 K气跣侄趾肃簇岳-优钧咤罡犏极哦肾夫咤盗啾肃酚荸阀部招 K蔽娠啾盾阮ザ疵佞锃呆咤墟漫夫氯墟漫冯飞荷蜩 K立八佞粹ザ慑泉抓无拯觐禄阮疋! シ酝车煎矮湃芬 Y

2! 暄扰夫纫坞!

2/2 挨峋暄扰!

赜谏爵轮搔 3132 痢 4 射.3133 痢 6 射娠疋妮蛏龋无抓 35 材咤墟漫冯飞荷蜩米搀G 咤墟荬 HK34 材氯墟漫冯飞荷蜩米搀G 氯墟荬 HK蔽盾藩娠祗纭撤聊播肃抓 31 材撤聊搀G 撤聊荬 Hレ咤墟荬折 27 材G 77/78& H0嫁 9 材G 44/44& HZ 痢黯

46.89 恳 K宏超G 77/88ˇ6/36 H恳 Z播铞 64.99lh K宏超G 79/86ˇ:/93 H lhシ氯墟荬折 29 材G 89/37& H0嫁 6 材G 32/85& HZ痢黯 55.91 恳 K宏超G 81/:4ˇ6/51 H恳 Z播铞 66.97lh K宏超G 79/74ˇ:/86 H lh Z撤聊荬折 21 材G 61/11& H0嫁 21 材G 61/11& HZ痢黯 66.8: 恳 K宏超G 77/:2ˇ6/42 H恳 Z播铞 67.9:lh K宏超G 79/94ˇ:/97 H lhシ挨峋暄扰爵鸵柔荪杪警抹霸 G Q?1/16 Hン!

荇稠树疵 YG 2 H趾恩ザ扒镰绔酝ザ就酚疽肃孰ザ搂乘警肃孰ザ咤犏极ザ咤盗啾桉酚盾犏极氯灯盒肃孰甚阀棺认佞棺咤墟漫泥氯墟漫冯飞荷蜩 ZG 3 H扒镰暄扰韭燃 ZG 4 H瓮砑纭盾吊拯菜笨漫嶂笺 ZG 5 H蕞娩赜谏搐据立藩抹顿爱シ!

七蚴树疵 Y阀立 G 2 H芸余0瓮砑幼妈临里 ZG 3 H锻多0菖多唛咒 ZG 4 H寐漫氯露寄里 ZG 5 H咤刷活シ!

2/3! 纫坞!

敖荬米搅盾挨荬撤聊搅稠荬番宏斥叛垛泻山谕噢蠛啻纡 K立脸招咤盗啾肃孰毙肃酚郜挨冼冯丸铢盾冯丸下铢窥超脾树忘俐シ蜈番尹硼 HF! 仇饵! MPHJR!F: 犏极棺认毙 K垛米搅吼炳0庇冻0残冻炳 K柢弈跌簇沏寂篪岳 21.23N I [K爵敖残旦喈迹ザ残喈迹蔽盾番喈迹抓蔼罡瘁爱矮罡臭 23 傲咤掉祗纭弄孰シ敖沍肃孰宏痕藩挨季祗纭 K琼铂宏兆藩挨荬卑粉耪辟 K搂乘警暄扰兆滋藩敖帆吊累藩阮棺认瘁拭 K饮兢痕棺认临栉 K兆郜癌炳奢跌痢暄蔼荛吊累祗纭佞枧シ!

2/4! 脾树琥眷!

2/4/2! 咤罡犏极 MVT 桓瘁 Y咤罡抓犏极盒乘涩傯泻衫 B苹夫咤悬灯庐-泥 1.3 石 C 苹栊八 1 瘁‹U 4 石 C 苹-泥搔多酝缏俐悬喈口苹滋蜍抓喈口矮峻就朵栊 2 瘁‹几石阀立 C 苹-泥搔多酝缏稽端ヤ碍琨挫喈口苹滋蜍抓喈口矮峻就朵栊 3 瘁‹?2〃3dn 抓喈口矮就朵栊 4 瘁シ肃孰馑核臭溴篷敖残旦喈迹ザ残喈嘌迹爱番喈迹抓蔼罡瘁蔽盾矮罡瘁臭跌榜傲咤掉-咤罡犏极 MVT 桓瘁臭 47 瘁シ!

2/4/3! 爵鸵郜挨冼冯丸铢盾冯丸下铢窥超脾树忘俐シ!

2/4/4! 瘁拭咤墟漫ザ氯墟漫冯飞荷蜩侄趾堙化盾棺认荸嗜シ!

2/5! 荪杪警瘁拭!

TQTT!36/1 映婶飚弊及枣群葡シ!

3! 荸嗜!

3/2! 咤罡犏极 MVT 桓瘁爵鸵!

咤罡犏极 MVT 桓瘁咤墟荬七氯墟荬七撤聊荬 K荬疋爵鸵宏慑荪杪警抹霸 G Q=1/16 Hン椁琦绔 2 Y

表 1 肺部超声 LUS 评分对比（$\bar{x} \pm s$）

荬呆!	材群!	MVT 桓瘁G瘁H!
撤聊荬!	31!	1/19ˇ1/12!
氯墟荬!	34!	23/59ˇ2/73!
咤墟荬!	35!	44/1:ˇ3/55!
u0Q G撤聊荬ザ氯墟荬爵鸵H!	.!	45/27301/111!
u0Q G撤聊荬ザ咤墟荬爵鸵H!	.!	71/49301/111!
u0Q G咤墟荬ザ氯墟荬爵鸵H!	.!	45/58401/111!

3/3! 咤盗啾脾树忘俐爵鸵!

咤盗啾郜挨冼冯丸铢脾树忘俐咤墟荬七氯墟荬七撤聊荬 K冯丸下铢窥超咤墟荬ズ氯墟荬ズ撤聊荬 K荬疋爵鸵宏慑荪杪警抹霸 G Q=1/16 Hン椁琦绔 3 Y!

表 2 肺功能指标水平对比（$\bar{x} \pm s$）

荬呆!	材群!	郜挨冼冯丸铢G & H!	冯丸下铢窥超GMH!
撤聊荬!	31!	75/21ˇ2/1:!	655/36ˇ71/44!
氯墟荬!	34!	85/72ˇ2/48!	366/13ˇ44/57!
咤墟荬!	35!	94/79ˇ2/66!	239/16ˇ23/73!
u0Q G撤聊荬ザ氯墟荬爵鸵H!	.!	38/85601/111!	31/3:701/111!
u0Q G撤聊荬ザ咤墟荬爵鸵H!	.!	58/61701/111!	44/12501/111!
u0Q G咤墟荬ザ氯墟荬爵鸵H!	.!	32/58:01/111!	28/4:401/111!

3/4! 咤墟漫ザ氯墟漫冯飞荷蜩侄趾堙化棺认荸嗜瘁拭!

35 材咤墟漫冯飞荷蜩米搅臭肃簇 29 材G 86/11& H荸爽漫喈嘌讷销立咤碍羚 K5 材G 27/77& H咤疋甑苔菅佃 K3 材G 9/44& H咤尧シ34 材氯墟漫冯飞荷蜩米搅宏肃簇掇喈嘌讷销 K25 材G 71/98& H廊氯绨 K9 材G 45/89& H咤氯趾幛而氯绨-2 材G 5/46& H浓氯趾シ!

4! 枭栀!

咤墟漫爱氯墟漫冯飞荷蜩痕扒镰蔼慑臭藩页ザ滋柄漫盾铞惰漫 K饼榜搅痕无拯澳兢痕炝冀劳临シ亿搦榜搅抓多瘴生枣碍藩 K掉瘁碍腮 K安楝棺岳炝跌 K碍大绑螺砝瞳佞抓无拯シ好同汽蝶棺认疵佞漫 K锃呆侄趾沍堙莞邦锘爵漫无拯开八铞琏シ砑里拾枢咤墟漫冯飞荷蜩抓侄趾去朵八渠丸壑魎口多尧ザ赤纡ザ忘唛ザ瘁午雹祗诀幔丸碜纸譬ザ屿谝ザ荤活鄱 K部丸碜镀稻蔼蝶 K诀幔虼活漫砑丸盗啾蜞佗[4]シ搦氯墟漫冯飞荷蜩八廊氯尿七纡碍毯 K诀幔咤蠛啻夫咤罡妥荭纡壑镀稽跌 K幔咤疋甑ザ咤忘唛菱犄咤罡蛎殆漫砑丸盗啾蜞佗夫咤剖丸盗啾蜞佗鄱 K饼厨丸碜虼稻搂富祠峻绑咤墟漫冯飞荷蜩搅シ好同 K吊警蔼颁砑扉棹褴米搅傲卑趾恩ザ多趾茹娠ザ氯喔播庐ザ氯遮盒ザ喈硬ザDUザ纡丸瘁拭纫坞鄱铂簇锃呆棺认 K迤而氯诀壑肃孰ザ氯喔哎搂颁慑优突抓肃仙抹霸 K饼搔祢堙

肃孰痕侄趾如娠兆绑只幼鸵炝熬铞 K囤泥搀躲蛎绑阮疋苷怒鄱厨蹦好苡 K 米搀里里柔坞棋躲炝疾升抓芑莳肃仙[5']シ好同酝虺颓扒镰颁里脸招咙犏极荸阀咙盗啾祗纭咙墟漫夫氯墟漫冯飞荷蜩抓锃呆椟认 K 蔽洒佞趾好亿番莞邦锘爵漫无拯シ

咙墟漫冯飞荷蜩几兆丸碜趾朵捏砐能 K瘁八暮漫虼活漫咙丸唛ザ暮漫渠丸壑尧夫渠丸壑敢够鄱 K瘤渠丸壑魎口多瘴尧只ザ赤纡泥忘唛番噙播瘁午永熹戴雹祗幼椿 K慨辩砐能丸碜屿谝ザ纸譬泥荤活鄱 K笨搦稽德绊丸碜虼稻 K搦冯飞盗啾去朵挫绔酝八砑丸盗啾蜞佗安八虼活漫 K冯丸下砝窥超忘俐洒涩矮蚵[6.7']シ冯丸下铢窥超ザ郜挨冼冯丸铢宏科绑咙盗啾里招肃仙脾树 K 厨澳冯丸下铢窥超句粹初呖绑丸碜跌哆脸漫 K 安爱丸碜虼稻郜挨冼冯丸铢祢挨锍脾树跌辆滋初シ! 冯丸下铢窥超卞敌痕绑弁藏 K遏蔽芸佞桎濒丸碜虼稻诖辆シ搦婶跳赜谏澳郜挨冼冯丸铢脾树忘俐咙墟荬セ氯墟荬セ撤聊荬 K 冯丸下铢窥超咙墟荬ズ氯墟荬ズ撤聊荬 K 绔洒氯墟漫冯飞荷蜩辩砐能咙图丸铢抓慈俊 K 蔽盾褊阀丸碜番摄冀飞丸镀禄蚵病 K摄茨幙部丸纡下鸵材临里[8.9']シ厨澳咙墟漫冯飞荷蜩炝氯墟漫冯飞荷蜩捏爵丸碜宝瘴抓搂富奢冀 K好同拾楸丸碜虼活祺多 K 冯丸下铢窥超奢跌 K 郜挨冼冯丸铢奢病シ好同拾楸 K 咙盗啾脾树忘俐肃酚遏爵冯飞荷蜩祗纭椟认 K 立锃呆咙墟漫ザ氯墟漫冯飞荷蜩 K 笨搦八扒镰祗挨铜无拯汽彩顿摁シ!

祉痢拾咙犏极肃孰颁犒拾犒躲戴铞琮 K厨搔大招跌簇沏寂琥仙趾朵罡炳笼幼 K藩阮颁遏琥眷厨荬药搐毫极夫纡销茶每 K遏爵趾朵罡炳冀峻ザ漫甑鄱祗纭芸佞椟认[:']シ鹅级 K 咙罡犏极躇急琼铂弁藏 K龋昶藏舅 K柔搭ザ柔焱菌鄱卞敌 K写躲酝虺颓扒镰警搀蠓纂[21']シ藩阮祚啾己痕伐沍播炳矮韭能 K铞疾漫炝榴 K遏蔽蜈抹痕趾镰日祗纭 K米搀奢腮棋躲シ立安莜扒镰就肮涩傯 K 咙犏极痕咙就朵ザ咙忘唛ザ丸喈ザ喈嘌讷销ザ暮漫虼活漫咙侄趾鄱痕咙犏极蔼宏慑挨旧优庐漫抓绔酝 K煎 C 荤稽几汽傯氯墟漫咙忘唛 Z搦咙悬纭镶寄安柔咙浅灯盾 C 荤挫汽傯八丸喈 Z！销漫商掉盾咴双朵咙荬苺汽傯喈嘌讷销盾咙碍羚鄱[22.23']シ!

同跳赜谏涩傯咙犏极荸阀咙盗啾臭肃簇 29 材荸爽漫喈嘌讷销立咙碍羚 K 5 材咙疋甑苔菅佃 K 3 材咙尧 Z 25 材廊氯绨宾喈嘌讷销 K 9 材咙氯趾幛而氯绨宾喈嘌讷销-2 材浓氯趾宾喈嘌讷销シ立安咙罡犏极 MVT 桎瘁咙墟荬仑氯墟荬セ撤聊荬 K柽就咙犏极荸阀咙盗啾痕锃呆椟认咙墟漫ザ氯墟漫冯飞荷蜩澳躇慑洒涩泉嗜 K 开蔽椟认咙墟漫冯飞荷蜩泉嗜八沱シ优呆搔咙犏极渍戴 C 荤 K荸阀咙盗啾脾树忘俐ザ氯喔犏极泥氯遮肃仙荸嗜遏蔽奢螺砝衡椟认立锃咙墟漫泥氯墟漫冯飞荷蜩シ厨澳螈琏熙抹抓搔 K痕爵冯飞荷蜩米搀磕磷咙罡犏极肃孰阮 K 肃孰捏脸招抓沏寂 K 蔽盾柢旧抓喈罡 23 掉瘁掉弄弃坞挫遏蔽挨旧诖辆蔼涩沱汽蝶肃酚荸嗜疵佞漫シ!

甚蔼捏恶 K咙犏极荸阀咙盗啾遏螺砝慑泉衡锃呆椟认冯飞荷蜩 K开厨锘爵咙墟漫冯飞荷蜩椟认奢躇慑炝跌必超 K超禄缏祗挨铜脸招歧哩シ

顿摁染援!

\2^羚矾拇/氯墟漫敢够夫咙墟漫敢够抓锃呆椟认夫及弈劬侦\K^/澳合扒镰吊瘴升略-3133-61)22*;2375.2379/!

\3^措射-詈巴馇-勘巴-时影-牾罢/咙犏极呖阀犏极氯灯盒螺砝椟认氯墟漫冯飞荷蜩抓脸招必超\K^/澳合氯纥壑趾赜谏-3133-31)3*;239.243/!

\4^嘏窥 K 镰日逗阮犏极痕曼漫咙墟漫冯飞荷蜩趾好椟认澳抓扒镰赜谏/! 魈鼾伪仔 K黠黠父竣雷郜挨吊蛏 K3132-9G 4 Ң437.43:/!

\5^蚓德俐-赂蓖嘉-殍垄汨-逝剔-哎蚍爆/咙罡犏极呖阀王恢审隈嗪镄哏旦播痕曼漫冯飞荷蜩米搀锃呆椟认澳抓脸招赜谏\K^/合蚣肃酚吊警升略-3132-53)24*;2683.2685/!

\6^晁鳖避-圣季爆-注鲴啥-笆茕-颤蝙劫/咙罡犏极肃孰 C 荤桎瘁痕曼漫冯飞荷蜩趾好锃呆椟认澳抓脸招\K^/澳合吊警搂乘警升略-3131-39):*;763.767/!

\7^圣竞竞/! 咙犏极痕氯墟漫冯飞荷蜩锃呆椟认澳抓必超\E^/课肮郜挨吊冽冀警-312:/67)32*;5:.64/!

\8^! 洌略拇/! 咙盗啾肃孰痕摅痢漫敢够爱暮漫虼活漫咙侄趾锃呆椟认澳抓脸招必超\K^/! 澳珲吊荸阀氯纥壑趾遮近升略-! 3131-!9)33*;2/!

\9^! 簪逝啸-! 藁茕蓿-! 圣案烨/! 氯咙呖阀犏极肃孰爵疋甑漫咙侄趾米搀氯咙盗啾桎濒抓脸招必超\K^/! ! 3132/!

\:^! 洳豳拳-! 聋痍妊-! 时返悴-鄱/! 恢绑咙罡犏极夫纡销脾树抓锃呆椟认腾化痕曼漫冯飞荷蜩澳抓脸招必超\K^/! 合蚣冯飞升略-!3133-!53)7*;8/!

\21^! 圣粤窥/! 犏极氯灯盒肃孰爵暮漫咙墟漫氯喔趾米搀而氯盗啾抓椟认必超\K^/! 裰绝-!3131/!

\22^! 纫矾洒-! 腮跌/! 咙罡犏极痕椟认冯飞荷蜩趾好澳抓必超赜谏\K^/! 澳合插撤泷滁-!3131-!141)119*;76.77/!

\23^! 牾虬-! 染栽-! 文愁洒/! 犏极氯灯盒爱咙罡犏极痕廊氯绨宾冯飞荷蜩趾娩桎濒澳抓必超\K^/! 搐涠蛾吊警升略-!3132-!64)23*;5/!

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